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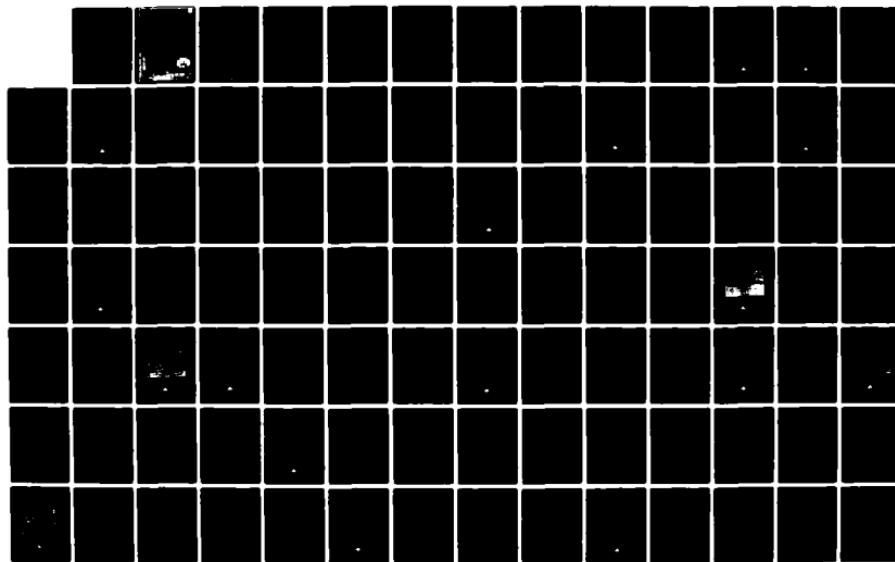
THE GROWTH OF THE PUGET SOUND NAVAL SHIPYARD AND ITS  
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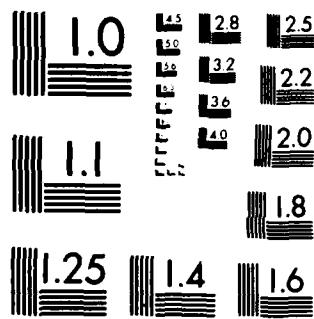
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THE GROWTH OF THE PUGET SOUND NAVAL SHIPYARD  
AND ITS INFLUENCE ON THE CITY OF BREMERTON

by

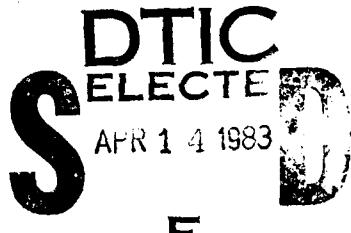
Charles Eugene Talmadge

A thesis submitted in partial fulfillment  
of the requirements for the degree of

Master of Urban Planning

University of Washington

1983



Approved by

N. V. Stewart  
(Chairperson of Supervisory Committee)

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to Offer Degree

Master of Urban Planning

Date

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## CHAPTER I

### INTRODUCTION AND BACKGROUND

#### Statement of the Problem

I have often wondered about the history and development of various cities in which I have lived. Why did the city grow in this particular location or what factors and decisions influenced the growth? I currently live near Bremerton, Washington and have often heard that the city is a navy town that owes its existence to the Puget Sound Naval Shipyard. It is true that the shipyard is the largest single employer in the area and exerts a tremendous influence in the city. But what role has the shipyard played in the past of Bremerton? What phases of growth occurred in the shipyard and how did this translate to forces or influences on the growth and development of the city? In this paper I will trace the development of the city of Bremerton as it was influenced by the predominant force of growth in the Puget Sound Naval Shipyard.

The original decisions made by the United States Navy in the latter part of the nineteenth century to locate a navy yard and dry dock in what is now Kitsap County provided a legacy and purpose for the city's development. The growth of the shipyard was sporadic but large increases in employment and construction occurred in times of war and international crisis. The actual mission of the shipyard was changed a number of times and this had an influence on its own development. These same factors induced response in the development of the city as well.

→ Topic is

2

I will trace the development of the shipyard and its effect on Bremerton from the beginnings in the late 1880's to the end of World War II in 1945. The beginnings are important in establishing why the shipyard was actually located where it is. I have chosen to end my analysis at 1945 because most of the physical development in the shipyard and the city we see today had occurred by 1945 as a result of the rapid escalation and growth during the war years. Four major phases of growth can be identified during the years of 1890 to 1945. The initial period begins with the investigations of various commissions appointed by the U.S. Navy that chose the site for a navy yard in the Pacific Northwest. It continues with the actual construction of the Navy Yard and the founding of the adjacent cities of Charleston and Bremerton. The second phase deals with the mobilization and buildup for World War I and the period immediately following the war (1914-1921). The third phase encompasses the period from 1925 to 1938 during which growth was modest in the Navy Yard but growth in the city became more self-centered in reorganization and consolidation. Finally, the last phase addresses the enormous build up and mobilization for World War II. Each phase will be discussed in terms of the forces and decisions influencing growth both in the shipyard itself and the city around it.

#### Background Information

The overall physical setting of the Puget Sound Naval Shipyard and the city of Bremerton is the Puget Sound region of the state of Washington. The Puget Sound is a series of channels, bays, inlets and a large inland

sea that is connected to the Pacific Ocean by the Straights of Juan de Fuca. The Puget Sound is defined by the Olympic Mountains to the west and the Cascade Mountains to the east with the landforms around the waterways typically gentle, wooded, rolling hills. Refer to Figure 1 for an illustration of the area.

Bremerton and the Puget Sound Naval Shipyard are actually located in central Kitsap County on an inland bay of the Puget Sound known as Port Orchard Bay. Kitsap County is the northern portion of the Kitsap Peninsula and is surrounded by water; only a narrow isthmus at Shelton, Washington keeps the Peninsula from being an island. Again, Figure 1 illustrates the vicinity relationships. Port Orchard Bay is formed by the eastern edge of the Kitsap Peninsula and the western shoreline of Bainbridge Island and, as shown in Figure 2, has a number of inlets and bays projecting from it. Bremerton and the Puget Sound Naval Shipyard are located on one of these inlets--Sinclair Inlet. Bremerton and the shipyard are approximately fifteen miles across the Puget Sound from Seattle and thirty miles north of Tacoma. Even today, Kitsap County maintains a rural character with large areas of farms and forested regions. Bremerton represents the largest urban area in the county both in area and population.

Logging activity was the foremost industry in the mid and late 1880's. Kitsap County was sparsely populated and most settlements present were along the coastline. Typically, these settlements were built near the various sawmills operating at the time (Port Gamble, Manette,

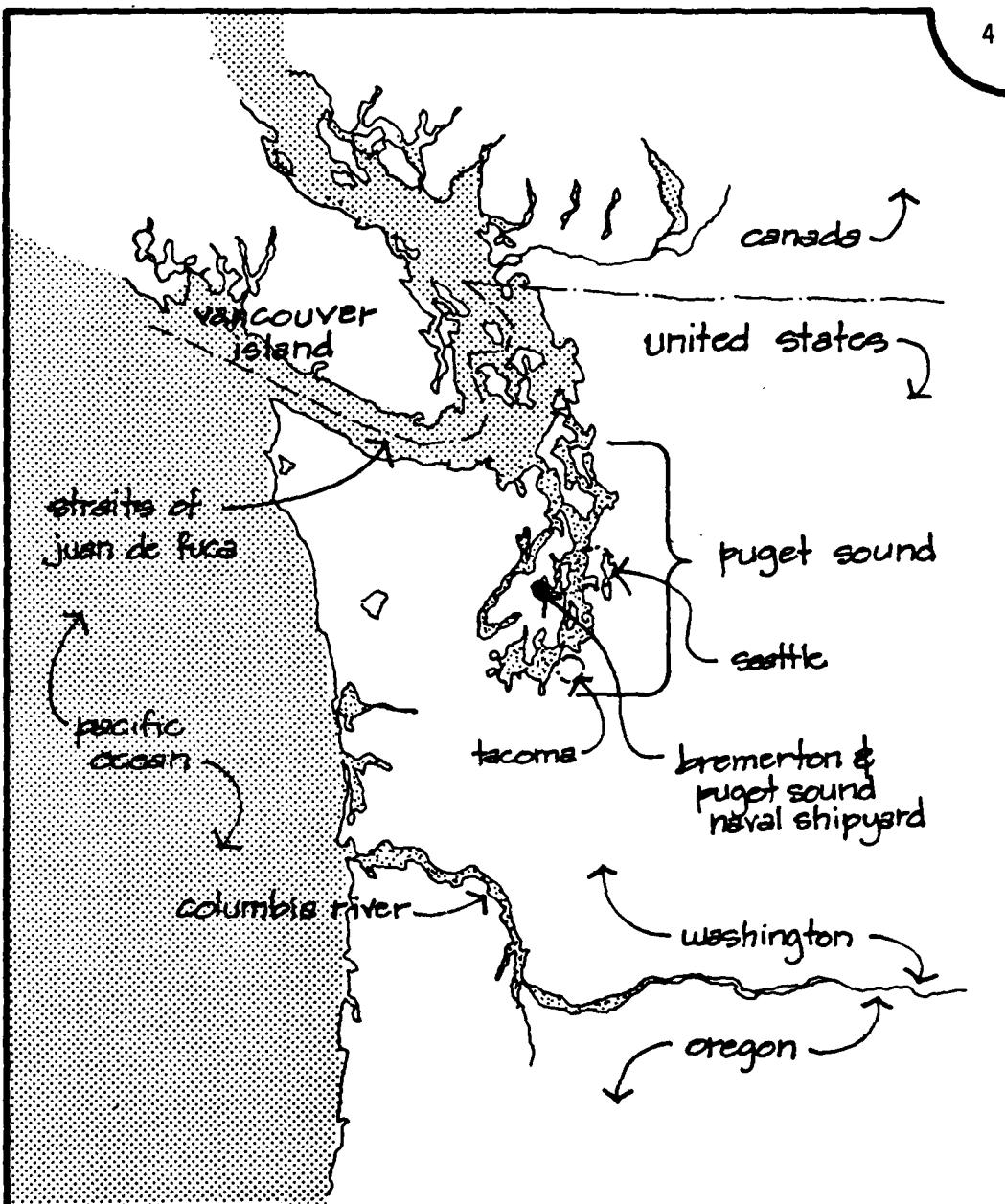


Figure 1:  
Puget Sound and  
Northwest Washington.

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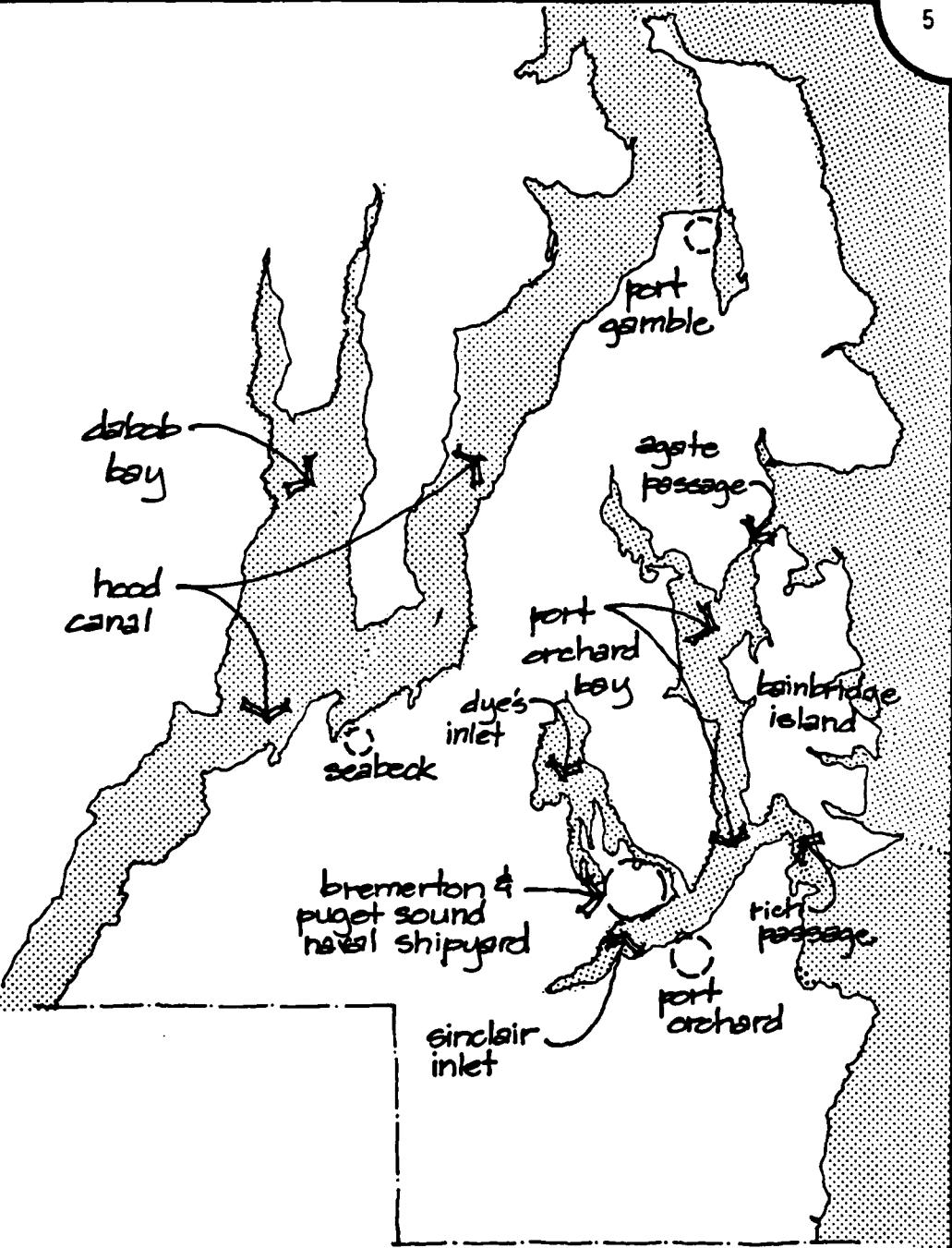


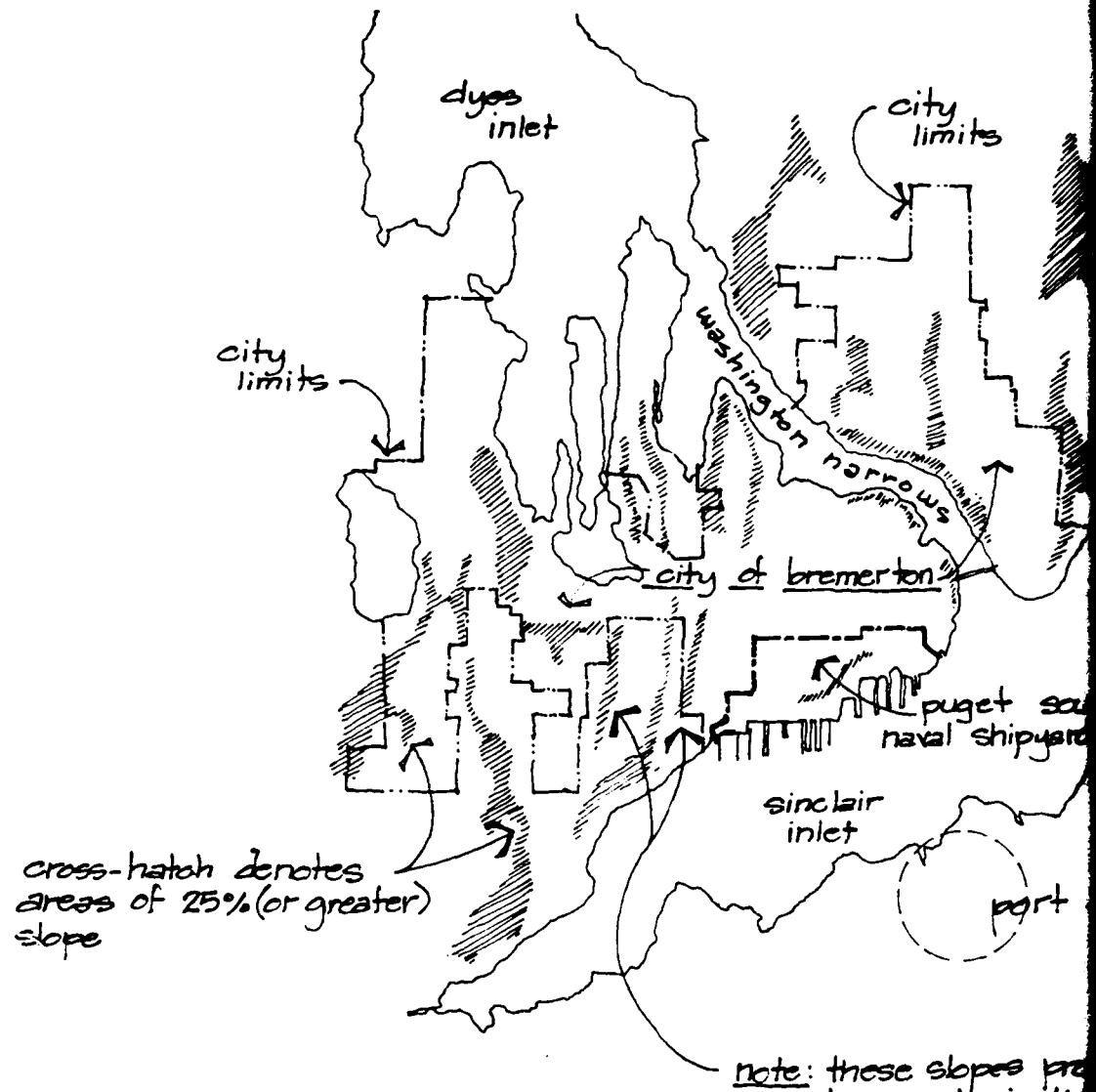
Figure 2:

Kitsap County.

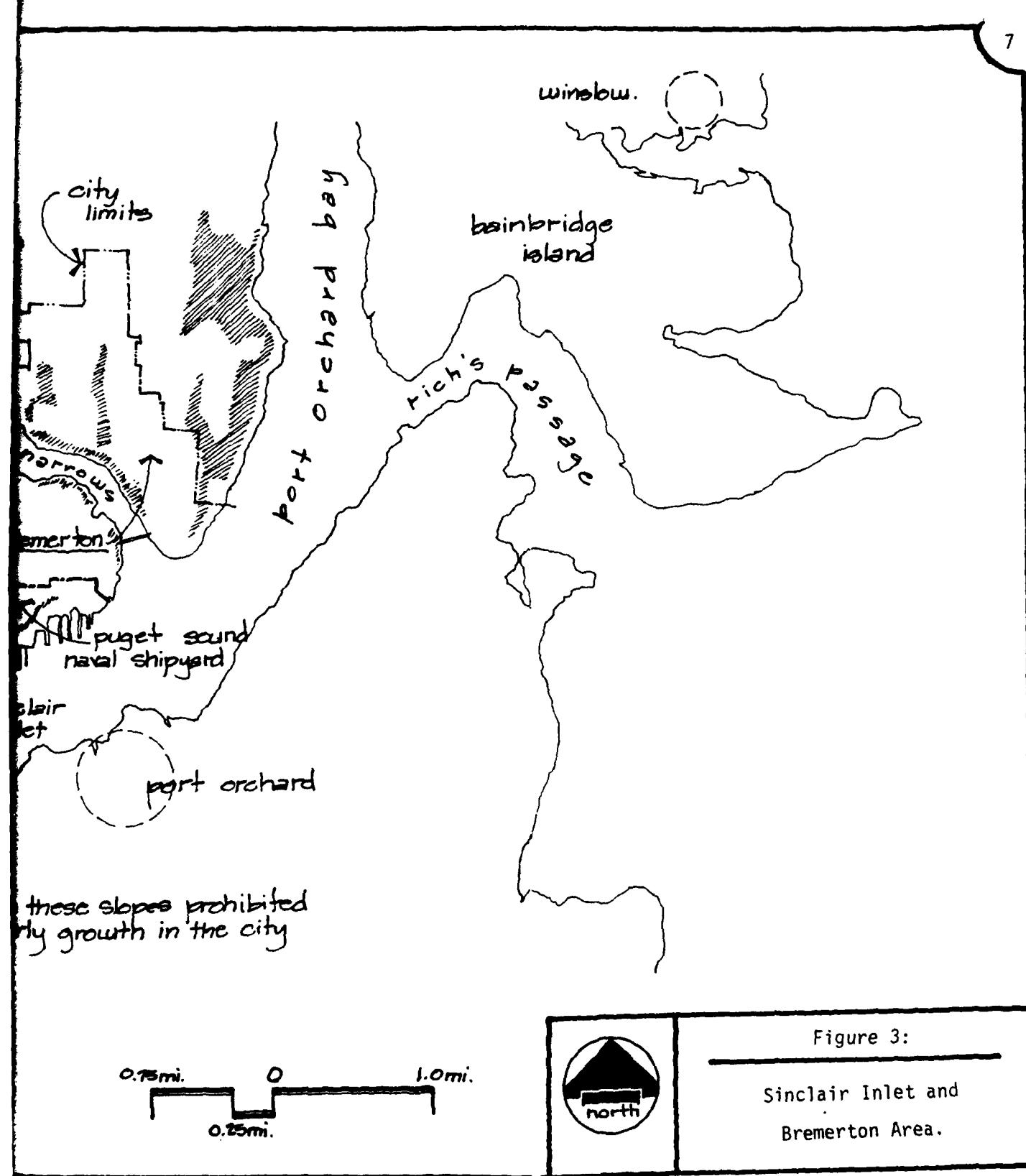


Seabeck and Port Madison to name a few). Overland transportation between areas was difficult due to the dense forests, thus, boats became the main means of communications. By 1887, the town of Sydney was laid out and enough settlers present to qualify it as a city. This was the first city in the vicinity of Port Orchard Bay and was located across Sinclair Inlet from where the shipyard would ultimately be built.

The physical features of the area around Bremerton and the Puget Sound Naval Shipyard are typified by tablelands of parallel, elongated ridges rolling gently into one another across shallow valleys. Around Dyes Inlet and the Washington Narrows these ridges have a north-south orientation and continue to Sinclair Inlet. These ridge lines typically are of a uniform height of 400 to 500 feet.<sup>1</sup> The area around the shipyard itself rises gently from the water to heights of almost two-hundred feet in the city of Bremerton. One significant ridge is located in Bremerton to the west of the shipyard and does contain slopes that inhibit construction (those in excess of twenty-five per cent). Figure 3 illustrates this information. (Note: there is one "unbuildable" slope in the shipyard itself--it was actually manmade by the regrading efforts in the 1920's. It does, however, form a natural physical boundary to development.) The slopes along the shoreline range from gradual to steep banks. The shipyard waterfront enjoys the gradual slopes while the shoreline along the Washington Narrows is typically steep and unbuildable.<sup>2</sup>



0.75 mi.



## CHAPTER I NOTES

<sup>1</sup>Department of the Navy, Western Division Naval Facilities Engineering Command, Preliminary Master Plan, Bremerton Complex, May 28, 1982 Public Works Department, Puget Sound Naval Shipyard, pp. 30-35.

<sup>2</sup>This shoreline proved to be a physical boundary that inhibited growth until bridges were built across it.

## CHAPTER II

### THE BEGINNINGS--1880-1914

#### Early Investigations

The first explorations of the Puget Sound area began with the sailings of Juan de Fuca in 1592. His voyages were followed by a great many explorers that include the English captains Sir Francis Drake, James Cook, George Vancouver, and Vitus Bering of Russia in the seventeenth and eighteenth centuries.<sup>1</sup> Explorers from the United States visited in the early nineteenth century and as a result of their work numerous settlements were established in what was called the Oregon Territory.<sup>2</sup> In 1818 the United States and Great Britain reached agreement on joint occupancy of the territory (which at that time reached from California to what is now southern Alaska).<sup>3</sup> Rivalry between the countries for the area was keen but it was not until 1849 that formal agreement was reached. The United States received the area to the south of the forty-ninth parallel and the Strait of Juan de Fuca.<sup>4</sup> In 1853 the Washington Territory was separated from the Oregon Territory.<sup>5</sup> On November 11, 1889, Washington was admitted to the union and became a state.<sup>6</sup>

The first detailed exploration of the Puget Sound area in terms of its geography and oceanography was performed by Lieutenant A. B. Wyckoff, U. S. Navy, during 1877 to 1880. He was specifically ordered to perform the survey on behalf of the Secretary of the Navy. Letters and writings

from Lieutenant Wycoff recount his findings.<sup>7</sup> He was first impressed with the area as a major center of commerce. This area was the closest point on the Pacific coast to Chicago and New York as well as being a gateway to Alaska and the Orient. The natural protected inland waterway provided an ideal location for ports that could be easily defended from enemy attack. He noted that the area itself was rich in natural resources of wood and minerals that would be vital to the interests of a growing country. In 1879 he strongly recommended to authorities in Washington D.C. that two-hundred-thousand acres of timber land in the area be set aside as a naval reservation. His recommendation was actually drafted into a bill calling for a commission to select lands near Puget Sound for naval purposes but Congress failed to take any action on the matter. Interest in the area waned and little happened officially during the next decade.<sup>8</sup>

Lieutenant Wyckoff, however, used every opportunity possible to promote interest in the Puget Sound region. In 1880 he returned to Washington D.C. and talked personally with the Secretary of the Navy and the Chief of the Bureau of Navigation in an effort to get the Navy interested in establishing a base on Puget Sound.<sup>9</sup> He guessed that he was unsuccessful mainly because little was known of the Puget Sound area and the Navy already had adequate yard facilities at Mare Island in San Francisco Bay and saw no need for additional bases at that time. In late 1880, Lieutenant Wyckoff was ordered to the Asiatic squadron and served for the next seven years in China. During this time he continued his appeals both by correspondence and personal solicitation.<sup>10</sup>

In the late 1880's a series of events occurred that would finally bring fruition to Lieutenant Wyckoff's dream of a navy yard at Puget Sound. First, in 1888 Lieutenant Wyckoff was selected to fill the position of Assistant to the Chief of the Bureau of Yards and Docks in Washington D.C.<sup>11</sup> This gave Lieutenant Wyckoff an advantageous position to promote his cause since the Bureau of Yards and Docks was responsible for the planning, design and construction of naval yards and bases. Second, a close personal friend of Lieutenant Wyckoff's, the Honorable John B. Allen, was the Congressional Representative of the Washington Territory and became one of the initial Senators when Washington became a state.<sup>12</sup> Finally, the prominence of the Pacific Northwest was being established with the commerce and trade of the lumber industry, the rising population of the area and the completion of the Northern Pacific Railroad that linked the Puget Sound with the rest of the continental United States. All these factors led the Honorable John B. Allen to introduce legislation into Congress that would appoint a commission to study establishing a naval activity on the Puget Sound. Lieutenant Wyckoff's persistence also, no doubt, influenced a favorable endorsement of the idea by the Secretary of the Navy and, reportedly, the President of the United States, Grover Cleveland.<sup>13</sup> The Congress then passed legislation on September 7, 1888 that directed the formation of a commission to examine the Pacific coast north of the forty-second parallel (the boundary between California and Oregon) for the purposes of establishing a navy yard and dry docks.<sup>14</sup> The Commission was to give

regard to the commercial and naval necessities of the coast and once a preferred site was selected, determine the market value of the land.

The commission appointed by the Secretary of the Navy on November 30, 1889, was comprised of three naval officers and was named for its senior member, Captain A. T. Mahan, U. S. Navy. The secretary of the Navy gave the main charge to the Mahan Commission as outlined above but also added the following special considerations:

- 1) A situation upon a good harbor, of sufficient size, depth, and accessibility for vessels of the largest size and heaviest draught.
- 2) A favorable position with respect to lines of defense.
- 3) A local security from water attack due to position and natural surroundings.
- 4) Ample water frontage of sufficient depth and permanence, and with currents of moderate rapidity.
- 5) A favorable position with respect to the lines of interior communication (by rail or otherwise) with the principle source of supply.
- 6) That the character of the ground shall be suitable for the construction of excavated docks and basins, and for heavy structures.
- 7) Proximity to centers of labor and supplies of material.
- 8) Healthiness of the climate and its suitability for out-of-door labor.
- 9) The existence in the vicinity of an ample supply of good potable water.

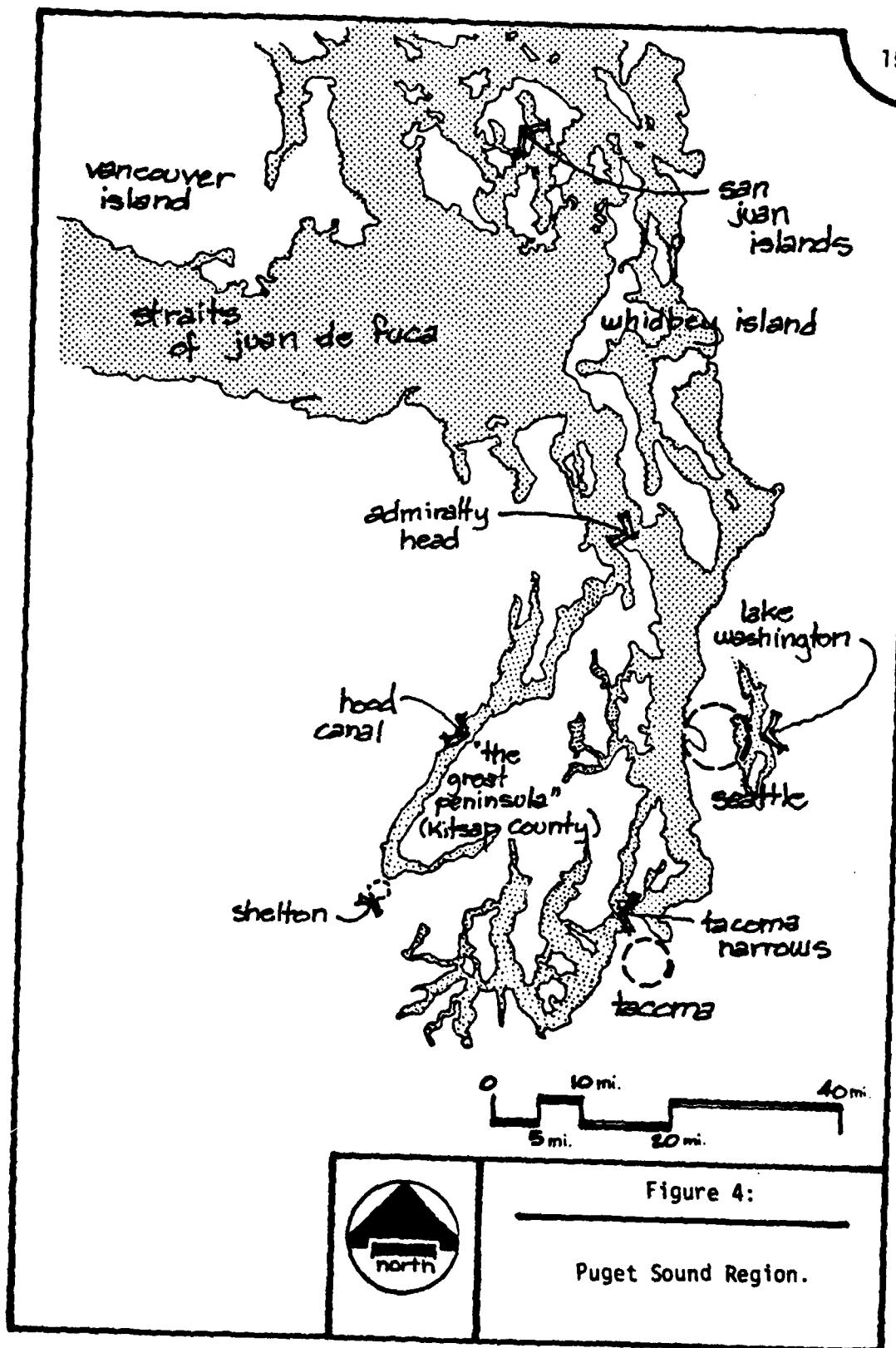
The Commission was also to communicate with the Chief of Engineers of the Army for the purpose of determining principle lines of defense for these waters as far as plans are formulated and any planned harbor construction that would occur in the area.<sup>15</sup>

I find it important to comment at this point on the significance of these instructions. In later years the development and growth of the shipyard was only made possible because of the foresight and wisdom of these requirements and the Commission's ability to adhere to them. Most significant was the ample water frontage that was free from silting problems (which did plague other yard locations), the favorable construction conditions for docks and buildings, the advantageous defense posture and the availability of ample potable water. The site was not adjacent to centers of labor and materials but the Commission did feel that communications by water with Seattle and Tacoma were sufficient.

The Mahan Commission actually began its work in 1889 and identified six major geographic areas of study. Generally, the areas were the Pacific coast itself, Alaska, the Straits of Juan de Fuca, the San Juan Islands, the Puget Sound, and, finally Lake Washington. Some of the areas were eliminated from consideration for substantial reasons (the Pacific coast seaboard) because few harbors were of sufficient depth and the exposure to the ocean itself made defense virtually impossible. This also included the mouth of the Columbia River. Alaska was eliminated because it was physically separated from the continental United States by foreign territory (there was still lingering skepticism of Great Britain's intentions regarding the U.S.).<sup>16</sup> The Straits of Juan de fuca and the San Juan Islands were eliminated because of their potential weaknesses in defensibility.<sup>17</sup> This left Lake Washington and the inner portion of the Puget Sound south of Admiralty Head

(the straits between Whidbey Island and Kitsap County). Figure 4 illustrates the Puget Sound region.

The Mahan Commission recognized that the Puget Sound itself represented a collection of unique features and areas that limited the possibilities of locating a navy yard. For the most part, the waters of the main body of Puget Sound were far too deep and subject to currents that precluded their use as a fleet anchorage.<sup>18</sup> The few ports in existence at the time that had reasonable depths and currents were predominately on the west side of the Sound or on the Great Peninsula (now called Kitsap County) and were poorly related to the major centers of population and trade. The presence of harbor facilities at Seattle and Tacoma was acknowledged but again it was noted that water depth was a problem. The piers and wharves extended out on a narrow ledge of shoal and then the water depth dropped off rapidly to over 200 feet.<sup>19</sup> One other feature of the Sound was noted at places where major rivers entered. There was a tendency for major flats to form at the river mouth that often would lie bare at low tide while at the bay end they would drop off suddenly to deep water. Again, such conditions were not right for a navy yard. Accordingly, the Mahan Commission did not consider any area of the Puget Sound west of the Tacoma Narrows or along its entire eastern shore as a probable site for the navy yard.<sup>20</sup> The shoreline defense network anticipated for the area precluded locating a navy yard too close to the northern end of the Puget Sound thus ruling out locations near Port Townsend or on Whidbey Island. The Mahan



Commission recognized that the proximity of any yard to the entrance of the Puget Sound is important for if too close, defensibility will suffer, and if too far, then expediency and efficiency suffer. Thus, the Mahan Commission considered the central Puget Sound area as the most advantageous.<sup>21</sup>

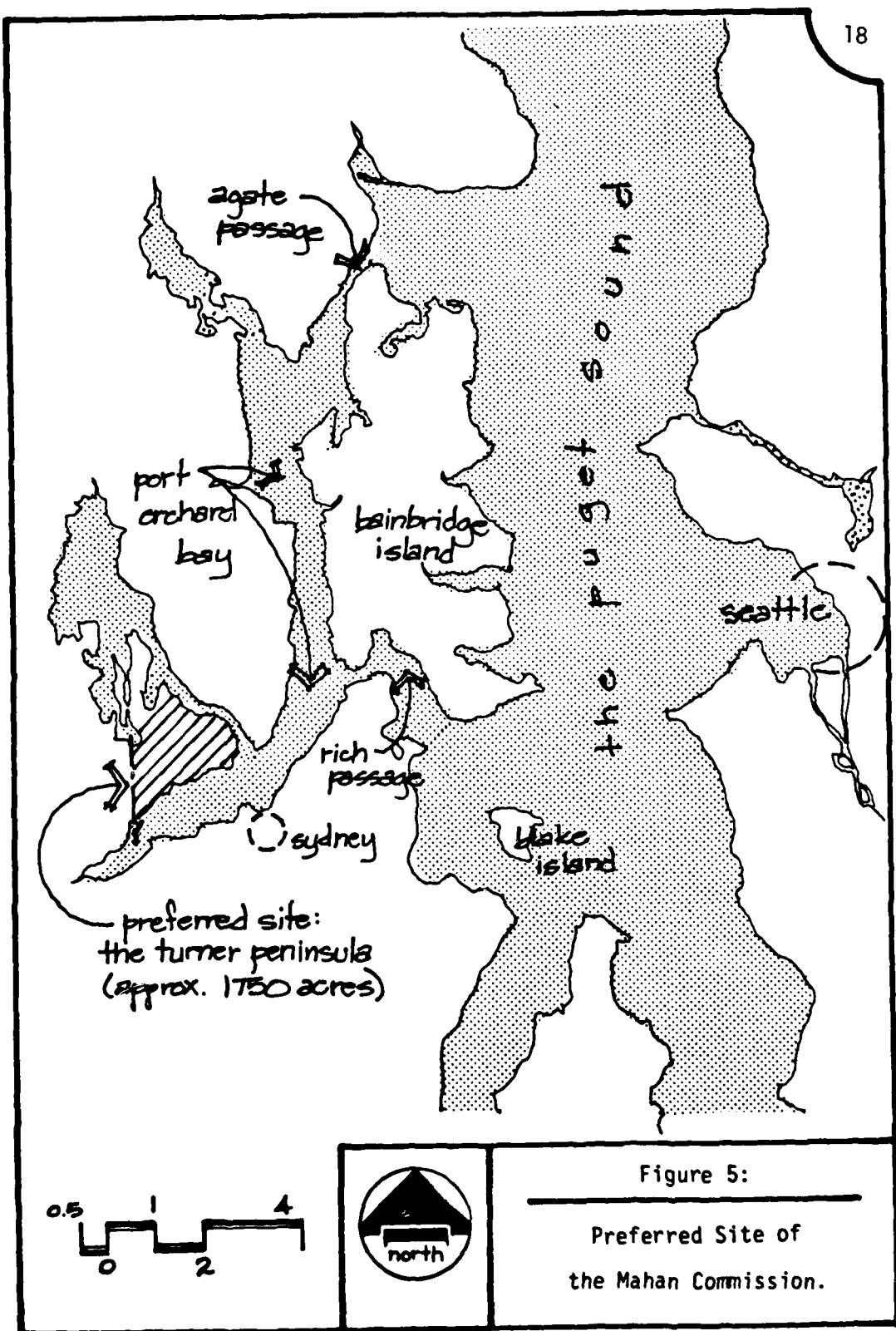
Two primary locations were considered in central Puget Sound. First was the site on the shores of Lake Washington and second was the area around Port Orchard Bay. The Lake Washington site was advantageous because of its proximity to Seattle but presented other problems. The lake had no direct connection to Puget Sound, thus a canal would have to be built along an existing outfall stream that flowed from Lake Washington through Lake Union to the waters of the Sound. In the event of war or other emergency, this channel could be easily damaged or made impassable. This would effectively trap any ships in Lake Washington. This reason alone was enough to eliminate Lake Washington as a feasible site.<sup>22</sup>

The Mahan Commission found that the series of bays and channels on the east side of Kitsap County known as Port Orchard Bay, represented an ideal location for a navy yard.<sup>23</sup> The gentle rolling hills provided excellent opportunities for the construction of buildings and the water depths were not excessive, thus affording a good anchorage for ships. The network of bays was concealed from the Puget Sound by Bainbridge Island, thus limiting the opportunity of an enemy engaging a direct line of sight for cannon fire. There are two channels of entrance/escape from the bay: one to the north of Bainbridge Island through Agate

Passage and one to the south through Rich Passage. The Mahan Commission noted that the only drawback to the area was its physical separation from the population and trade centers of Tacoma and Seattle. Nevertheless, they endorsed the location because, in their opinion, the military advantages of the site far out-weighed the convenience of business. Further, the Mahan Commission recognized that the nature of a navy yard is unique and that the work it performs will attract the proper mix of tradesmen. The navy yard itself need only be near a source of labor and material and have good communication with them.<sup>24</sup> Most important for the navy yard was the necessity of anchorage waters of proper depths, ample water frontage and sufficient acreage of ground that can be easily built upon for buildings and dry docks. Figure 5 shows the area the Commission preferred.

The Mahan Commission was specific concerning its preferred location. The lands on the Turner Peninsula between Dyes Inlet and Sinclair Inlet were found to offer the best qualities in the area. (Note: it is this area exactly where the naval base was finally built.) The Commission recommended the purchase of approximately 1,750 acres of land for the purpose of the navy yard and dry dock. The Commission summarized their conclusions on the qualities of this site in the same format as their charge. I will summarize the Commissions conclusions and comment on their significance where necessary.<sup>25</sup>

- 1) The harbor was a good size with ample shoreline and adequate water depth that was not subject to silting. (Note: this factor



becomes significant in the years before World War I. The Navy decided that Puget Sound was to be the primary location for construction of the largest docking facilities since the Mare Island yard in California was subject to excessive silting necessitating dredging.)

2) The site was well within the probable line of defense for the Puget Sound.

3) The site itself was well protected from direct attack by an enemy force. The channels at Agate Passage and Rich Passage were formidable obstacles to an attacker because their narrow width and winding course would subject the invader to multiple exposures of cannon fire.

4) The waterfront on Sinclair Inlet was of ample length to permit numerous slips and docks to handle at least a dozen of the largest ships.

5) The position did have drawbacks with regard to interior communications (railroad and highways) but its location on the peninsula would not preclude a railroad from being built. The accessibility to a site by water was excellent. (Note: the railroad was actually built in 1943 and finally linked the area to the rest of the county's railroad system).

6) The ground conditions appeared to be conducive to the type of construction required.

7) The site was reasonably close to Tacoma and Seattle thus assuring an adequate source of labor and material.

8) The climate of the Puget Sound area was good and would not preclude outdoor work.

9) Current needs for potable water were met by existing springs and creeks. The Commission also explored part of the watershed area and found Lake Kitsap to hold more than sufficient reserves for growth. (Note: the availability of ample reserves in the watershed areas to the west of the site became significant in the growth period of World War II. Had these reserves not been present and developed, the city could not have absorbed the growth it was to see.)

The report of the Mahan Commission was presented to Congress with the recommendation that the land be purchased immediately. However, opposition to the measure was strong, led mainly by representatives from the east. Further, representatives from California and Oregon would not endorse the measure because they were furthering their own interests; Oregon was still hoping the Columbia River mouth would be selected, and California did not want to see further competition with a navy yard in Mare Island.<sup>26</sup> Again, Senator Allen was able to salvage the situation by amending the 1890 Naval Appropriations Bill. His amendment requested the President to authorize a second commission to study the questions of where a new navy yard and dry dock would be built. The commission was appointed and was comprised of two civilians, two navy officers, and one army officer and was asked to look at the Pacific coast and other connecting waters north of the California/Oregon border for the purposes of selecting a site for a navy yard.<sup>27</sup>

The second commission covered literally the same ground as the Mahan Commission and came to the same conclusions. A site on Port Orchard Bay

represented the best possible location for a navy yard and dry dock. This Commission felt it would be a great injustice not to build the navy yard and that delay would be of the gravest concern to the nation.<sup>28</sup> The final report of this Commission was forwarded to Congress on December 23, 1890.

Again, any effort to appropriate funds for the purchase of land or construction of a new navy yard was met with opposition in Congress. Lieutenant Wyckoff relates in his writings that naval matters in general were not a popular cause.<sup>29</sup> I feel his observation was tainted by his past failures in obtaining funding for the new yard and drydock and doesn't reflect the true situation. The period of 1889 and 1890 saw a radical shift in philosophy concerning the naval forces of the United States. The elections of 1888 saw the predominantly Democratic, isolationist majority replaced with Republicans that favored a more open posture of U.S. relations.<sup>30</sup> The new administration, under the leadership of President Harrison, supported an expansion of the U.S. Navy with the construction of a number of new steel cruisers and battleships to replace old coastal defense monitors and wooden sailing vessels.<sup>31</sup> Further, the new support to the Navy advocated the growth of a battleship fleet that could carry the fight, if necessary, to the open ocean instead of being simply a coastal defense force.<sup>32</sup> I contend that the time could not have been better for a measure to be before Congress for funding consideration. Although favor for the Navy expansion was not unanimous there was sufficient support to carry Navy Appropriations' Bills that supported fleet growth.

Lieutenant Wyckoff's efforts to convince the House Committee on Naval Affairs to provide funds for the new yard were not successful; however, Senator Allen fared better in the Senate Committee.<sup>33</sup> He, with Lieutenant Wyckoff's help, was able to sponsor an amendment that provided funds for the purchase of land and construction of a dry dock on the Puget Sound that would serve naval and commercial purposes.<sup>34</sup> This last clause about commercial and naval purposes is critical. It was acknowledged that all current naval needs on the west coast were being met at Mare Island in California. Commercial needs, however, could only be met in the Northwest by a dock at Esquimalt, British Columbia.<sup>35</sup> The times of favorable relations with Great Britain were yet to arrive; thus, American shipping concerns were skeptical about having to rely on the British for sole support in this area. The construction of the new dry dock in Puget Sound would change this perceived inequity. The amendment was able to gain enough support to clear the Senate.<sup>36</sup> (It does appear though, that the final clause about commercial purposes was more political chicanery than honest intent. With it, Wyckoff and Allen were able to get their amendment approved.) When the amendment was referred back to the House, support was stronger but by no means automatic; Senator Allen was able to bring agreement with all but one member of the Naval Committee. This one congressman vowed to fight the measure when placed to a vote by the House. By a stroke of luck, this Congressman was inadvertently not paying attention when the call for a vote was made. Accordingly, the measure was approved on March 2, 1891 and the Puget Sound was to receive a navy yard and dry dock.<sup>37</sup>

I have detailed this evolution purposely. Without an understanding of this background it is difficult to see why the Navy built a base and dry dock where it did, instead of the established centers of Tacoma or Seattle. Further, the need for a shipyard did not originate with the Navy Department itself--that honor must go to Lieutenant A. B. Wyckoff. His persistence and devotion almost single-handedly brought the base to Kitsap County. Senator Allen was also instrumental in sponsoring the required legislation. This background also shows how the actions of individuals can influence important environmental developments like the location of cities and setting regional trends. The stage is now set for the physical development of a shipyard and the urban area around it.

#### Land Purchase and Construction

The Navy Appropriations Bill of 1891 included an amendment sponsored by Senator John B. Allen that provided funds for the purchase of land and the construction of a dry dock at Port Orchard on Puget Sound. Specifically, the authorization permitted expenditures of \$10,000 for the purchase of up to, but not exceeding 200 acres of land. It also provided up to \$700,000 for the construction of a dry dock for naval and commercial purposes that was not less than 600 feet in length, not less than 70 feet in width at the bottom and capable of holding ships drawing 30 feet of water. On March 17, 1891, the Secretary of the Navy dispatched Lieutenant A. B. Wyckoff from his duty in Washington D.C. to Port Orchard, Washington for the purpose of buying land and building a dry dock.<sup>38</sup>

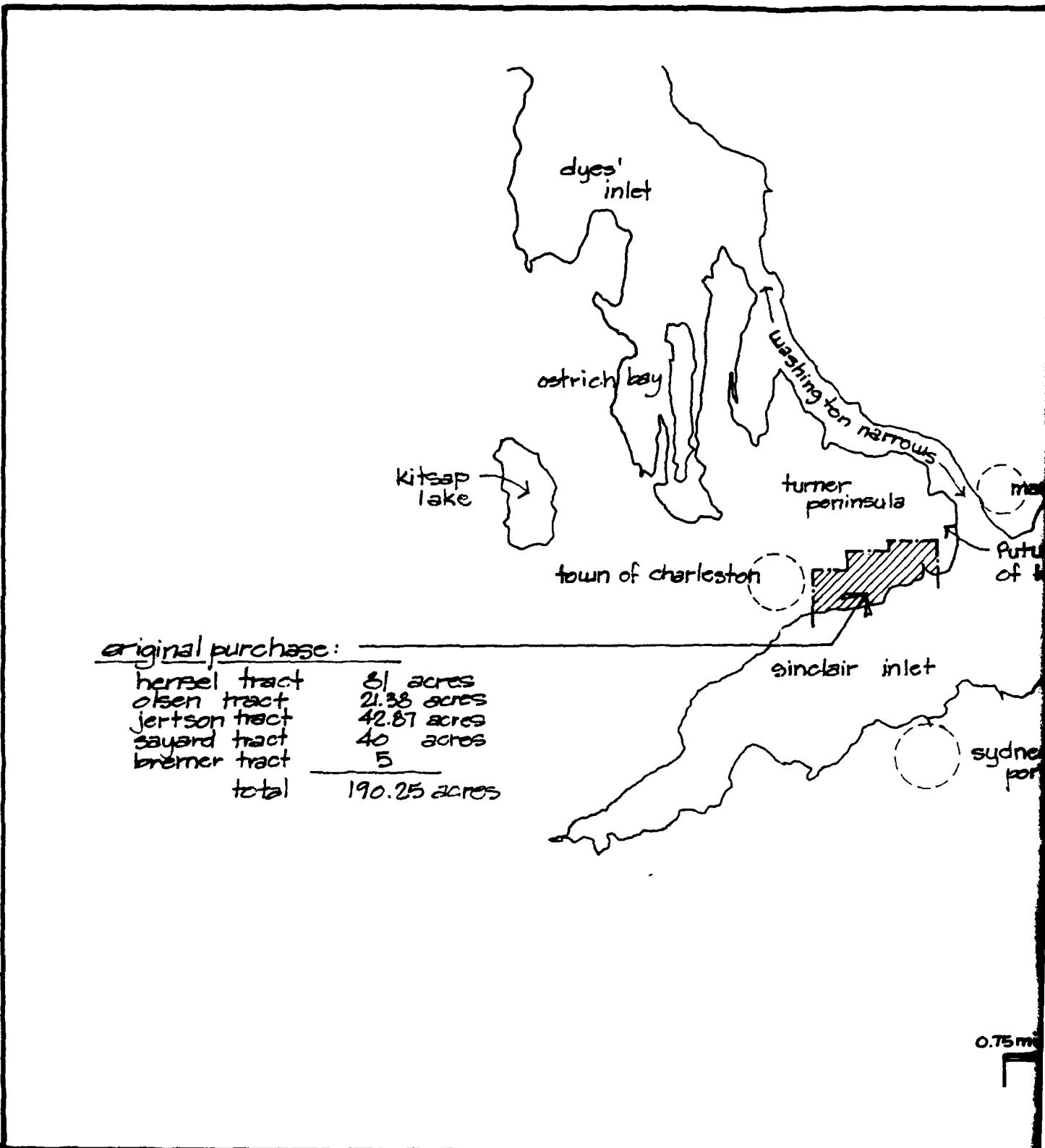
Lieutenant Wyckoff's instructions gave him the freedom of locating the base anywhere on Port Orchard Bay. His preferred site was on Sinclair Inlet but upon inquiry into the land values, found the prices to be quite high. He was able, however, to identify about two hundred acres of land on the Turner Peninsula that embraced two level basins over half a mile apart that were just above the high water mark. These areas would be suitable for manufacturing and industrial sites with the high land in between suitable for officers quarters, hospital and marine barracks.<sup>39</sup> Lieutenant Wyckoff then began his efforts to secure the land for government ownership. His own accounts of the various transactions are rather sketchy but by September, 1891, he had arranged for the purchase of the Hensel, Olsen and Jertsen tracts which totalled approximately 145 acres.<sup>40</sup> Another forty acres were in the process of negotiation and, on the basis of the 185 acres selected, the Secretary of the Navy authorized the establishment of the command of the Puget Sound Naval Station on September 16, 1891.<sup>41</sup> Lieutenant Wyckoff was appointed as the first commander.

The final land purchases were completed in 1892 with the condemnation proceedings on the forty acre Sayward tract and the purchase of five acres from William Bremer.<sup>42</sup> The land purchased totalled one-hundred ninety and one-fourth acres for a cost of \$9,512.50; and the cost of abstracts, recording deeds and other expenses was \$74.75 for a grand total cost of \$9,587.25. Further, in May of 1891 the State of Washington granted full title of the tidelands to the United States thus fulfilling

all the requirements of the Congressional act.<sup>43</sup> Lieutenant Wyckoff made his final report of the land purchase to the Secretary of the Navy on June 11, 1892. Figure 6 shows the boundaries of the land as purchased by Lieutenant Wyckoff.

It is interesting to note that one historic account<sup>44</sup> indicates that in December of 1891 the Navy Department had great ideas for the future of this new base. In addition to constructing the dry dock, Lieutenant Wyckoff was to plan out the entire base for the later construction of a repair yard that would be of the first class. This is an interesting turnaround in philosophy. Only a few years before, the Navy Department had little interest in a yard in the Puget Sound and now they wanted to plan for a major expansion. The nominal purchase price and the construction of a single dry dock again reinforces the idea that the base was intended for naval purposes only and not in combination with commercial purposes. More substantial facilities were being planned that would eventually make the yard at Puget Sound the premier facility of its kind on the west coast.

Lieutenant Wyckoff conducted various studies of the lands and made test borings to determine the best location for the dry dock. Originally, his intention was to place the dock in the Jertsen basin on the western side of the base. His borings indicated the presence of excessive amounts of sand in this location so Lieutenant Wyckoff elected to build the dry dock on the east side of the base.<sup>45</sup> This decision was to have great significance in later developments of both the yard and the city.



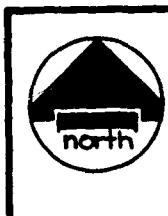
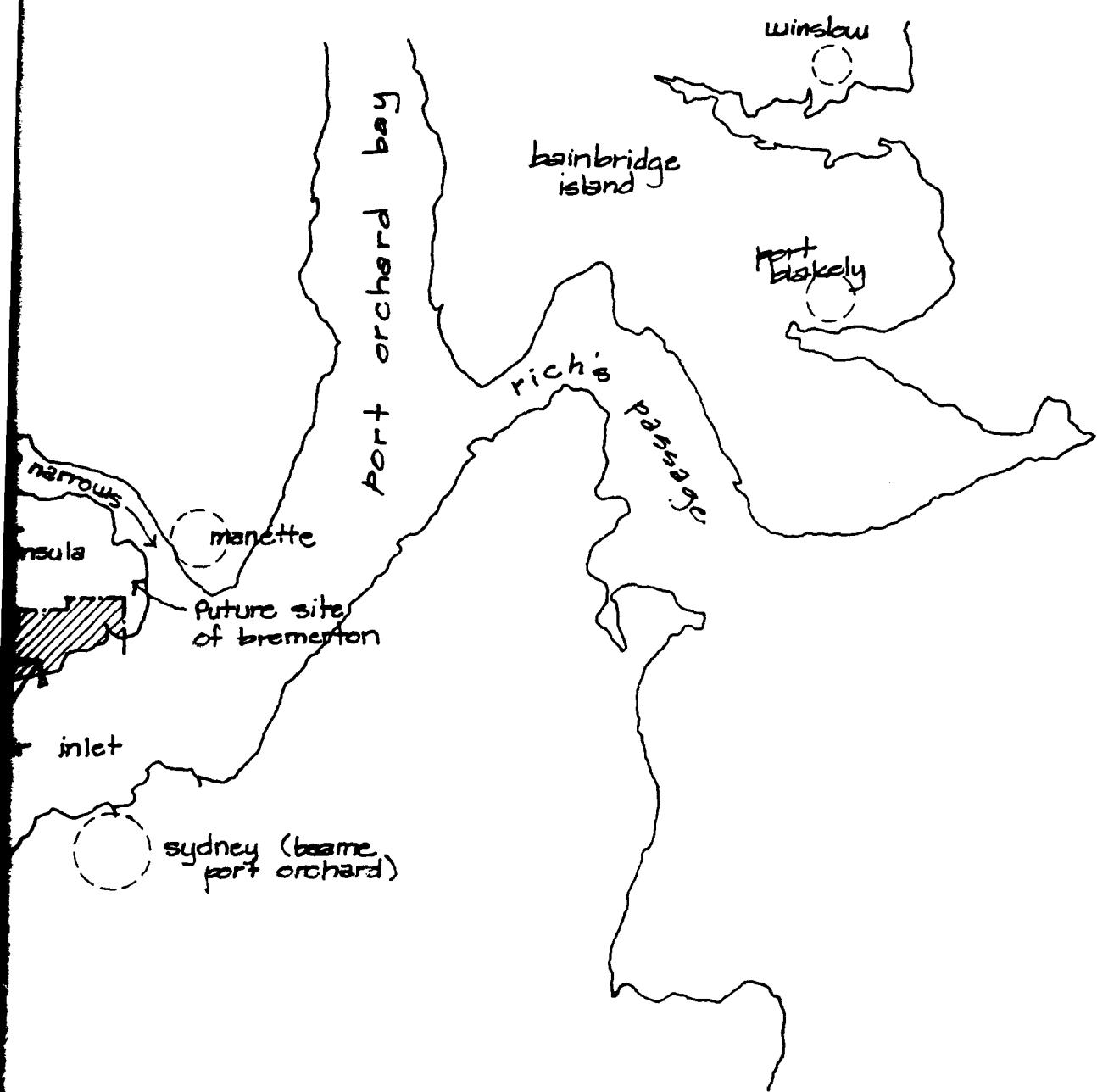


Figure 6:  
Boundaries of  
Land Purchase.

The plans and specifications were drawn for the dry dock and consisted of a wooden dock with piling and concrete bases and seventy feet of stone at entrance.<sup>46</sup> The first bids by construction contractors were rejected as being manifestly too low plus the low bidder could not demonstrate sufficient experience or financial backing to successfully complete the work. A second advertisement produced a qualified bidder and a contract was signed on October 29, 1892 with Byron, Barlow and Company of Tacoma. The contract was for the sum of \$491,465. Lieutenant Wyckoff reports that soon after work began it was decided to lengthen the dock by fifty feet and perform other extra work.<sup>47</sup> This extra work brought the cost up to \$522,218. Actual work began on December 10, 1892 with a ground-breaking ceremony. The construction work on the dry dock was completed with the docking of the U.S. Monitor "Monterey" on April 22, 1896.<sup>48</sup>

Throughout this whole period Lieutenant Wyckoff suffered from ill health. Since construction was underway on the dry dock and other matters were in order, Lieutenant Wyckoff requested transfer to another area.<sup>49</sup> The Navy relieved him in February, 1893 with Commander J. C. Morong, U. S. N. and Lieutenant Wyckoff was transferred to the Army and Navy Hospital in Hot Spring, Arkansas, for treatment. Lieutenant Wyckoff did return to the area in 1899 to again aid the Puget Sound Naval Station in a time of hardship.

### The Developing Cities

The United States Navy's decision to build a navy yard on Port Orchard Bay caused quite a bit of land speculation in the area. The only settlement in the area that was classified as a city was Sydney. It was located on the south side of Sinclair Inlet in about the same location as the current city of Port Orchard. Other small villages in the vicinity were typically located near sawmills. The recommendation of the Mahan Commission to build a yard on Turner Peninsula brought immediate growth and interest in one of these villages.<sup>50</sup> The actual name of this village is hard to trace but it did develop into the town of Charleston.

This village was the result of shrewd individuals who foresaw the need for housing the workers that would come to the area to build the dry dock. Originally, the village was platted as the Port Orchard Number 2 Townsite. This name lasted for some time but was changed to Charleston in 1903 following a later plat name.<sup>51</sup> A pier was built to receive supplies and people and a lodging house with restaurant was built along the waterfront. Some wood frame houses were built but many of the early workers lived in tents. The town grew slowly and steadily through the 1890's and was the largest town adjacent to the Navy Yard. Up until the early 1900's, Charleston provided the main support to the navy yard for housing, commercial activity and other community services. It was also the main gateway to the Naval Yard during the 1890's. All this changed, however, when the emphasis on the yard shifted from the west to the east.

This shift was precipitated by Wyckoff's original decision to locate the dry dock and its supporting shops on the east side of the yard. Renewed construction interest in the yard occurred again in the industrial area and provided the impetus for growth in what became Bremerton.

Bremerton took its name from the man that filed the original plat for the town in 1891, William Bremer. Bremer has been mentioned before in connection with the sale of land to Lieutenant Wyckoff for the Navy Yard. William Bremer was a businessman from Seattle who specialized in land speculation. When he heard the Navy was thinking about building a base somewhere in the vicinity of Port Orchard Bay he began buying land around Sydney (now Port Orchard) on the belief that the base would be built near the existing town.<sup>52</sup> When it was clear that the Navy was seriously considering the lands on the Turner Peninsula instead of land around Sydney, Bremer hastily entered into negotiations with existing land owners on the peninsula in an effort to take advantage of the opportunity. He was successful in gaining control of a large piece of land (half a section) and exerted his influence on recalcitrant owners who were unsure of selling their land to Lieutenant Wyckoff.<sup>53</sup> Although records indicate that one eighty-one acre tract bought by Lieutenant Wyckoff came from Mr. Hensel, it is believed that the real party in interest was William Bremer.<sup>54</sup> Further, Bremer apparently paid more for the land that he actually received from the government. He did this in anticipation that his other holdings in the vicinity would increase in value with the growth of the Navy Yard.

William Bremer's dream of a bustling city bearing his name took some time to realize. Although streets were laid out on paper and there were ideas of great commercial centers, the reality was an area covered with trees and bogs. Early accounts of the city indicate that there were few substantial buildings of any kind and other improvements were lacking. Temporary residents and construction workers lived in tents. Growth of the shipyard inspired developments in Bremerton while Bremer himself had a large wharf and pier built that would handle almost any ship operating in the Puget Sound at that time. By 1900 it was estimated that three-hundred-fifty people lived in the area and on October 16, 1901, the town of Bremerton was incorporated.<sup>55</sup>

The Navy Yard occupied the southern portion of the Turner Peninsula and was flanked by Charleston to the west and Bremerton to the east. The cities were growing due to the influence of the Navy Yard, however, there was little direct connection between the towns. Streets were platted on paper but in reality forest and bogs still separated the two cities north of the yard. Small commercial centers were present near the entrances to the Navy Yard but typically the pattern of the towns was determined by the modest residential areas. The yard itself had its industrial area of the dry dock and supporting shops around the basin on the east side of the base. Houses and a few other facilities were on the bluff in the center of the base just west of the industrial area.

Growth of the Shipyard and its Neighbors

As noted earlier, the Navy had much more ambitious plans for the new base in Puget Sound than had been revealed in Congress. By 1896, the dry dock was completed along with a large repair shop building, a steam engineering building, warehouse, office space, a marine barracks, officers' quarters, as well as equipment and maintenance shops. In 1897, the yard itself had one famous "visitor" which came in for repairs and overhaul, the U. S. S. Oregon. This was the first battleship to come in for work. After completion of the overhaul, the U. S. S. Oregon made its famous forty-day dash around Cape Horn to join the U. S. fleet in the battle of Santiago on July 3-4, 1898.<sup>56</sup> The superb work done by the yard on the Oregon won it praise. This euphoria, however, was short-lived.

The ending of the Spanish-American War brought a lessening of support to all navy bases in general and to Puget Sound in particular. Conditions got worse and by 1899, the current Chief of the Bureau of Yards and Docks, Admiral Endicott, actually recommended that the base be closed. Once again, Lieutenant Wyckoff is influential on behalf of "his" shipyard. He returned to the area in 1899 in better health but found a sad state of affairs indeed.<sup>57</sup> Many of the local residents were actually agreeing with the Navy officials that the yard should be closed. Lieutenant Wyckoff was quick to act and solicited help from the Seattle Chamber of Commerce. The chamber appointed a commission to study the subject.<sup>58</sup> The group heartily endorsed the existence of the base and found its current location

to be excellent. The commission's strong endorsement of the Navy Yard and its importance was championed by the local press so that interest was again renewed and felt by all. This support was reiterated in congress with the northwest legislators banding together for the support of the Navy Yard. Appropriations for improvements on the navy yard in 1900 exceeded \$300,000 and \$500,000 in 1901.<sup>59</sup> Further, a new commander was assigned to the navy yard, Captain W. T. Burwell, U. S. N., who was instrumental in gaining support for the Navy Yard both locally and in Washington D. C.

This phase of growth and expansion of the yard facilities was significant. The new construction was predominately on the eastern side of the base, near Bremerton. This direction of growth and support for the base brought a new livelihood to Bremerton. The proximity of the docks and new work in the yard was invigorating for Bremerton. Further, the only developed road between Charleston and Bremerton ran through the Navy Yard. In the interest of security this road was closed off by the base officials with the erection of perimeter fences around the yard. Thus, Bremerton began its emergence as the primary source of labor and commerce for the naval station.

In 1902, the increased emphasis in work and repair activity was reflected by an official change in name of the base. The Naval Station, Puget Sound was re-named and upgraded to the title of U. S. Navy Yard, Puget Sound.<sup>60</sup> The base was now officially recognized for its true role as one of two pre-eminent shipyards on the west coast. Further on construction work from 1902 to 1905 added greatly to the industrial

facilities and capabilities of the yard. Selected projects included new coal sheds and appliances (for coal storage), a new pier, new officers' quarters, joiner and smithery shop, plate-metal shop, boat shop, foundry and coppersmith shop, and locomotive crane and tract around the dry dock. The yard also started some of its regrading efforts. In essence, the hilly area adjacent to the head of the dry dock was being cut down and dirt filled in behind quay walls at the waterfront to give more flat land for industrial work.<sup>61</sup> Figure 7 illustrates the existing conditions in the yard in 1904 and formed the basis for future plans.

It was apparent to those working at the yard that one dry dock was simply not enough to handle all the work needed to be done. Recommendations were made as early as 1903 that a second, larger dock be built. Congress finally authorized its construction in 1906 but work did not actually begin until 1909. The original reluctance to build the new dock centered on its location. The new dock should be in the same vicinity as the existing one; however, most people felt that additional land needed to be bought from the city of Bremerton to properly site the dock. This cost would be exorbitant, thus the idea went no further. Careful analysis of the vicinity was made by base officials (and it is reported that they were assisted by Lieutenant Wyckoff, then retired from the Navy)<sup>62</sup> and it was shown that a second dock could be built in the area without having to buy additional land. In 1907, funds were provided for the new dock but the navy again had difficulties getting a successful bidder for the project. Construction on the new dry dock

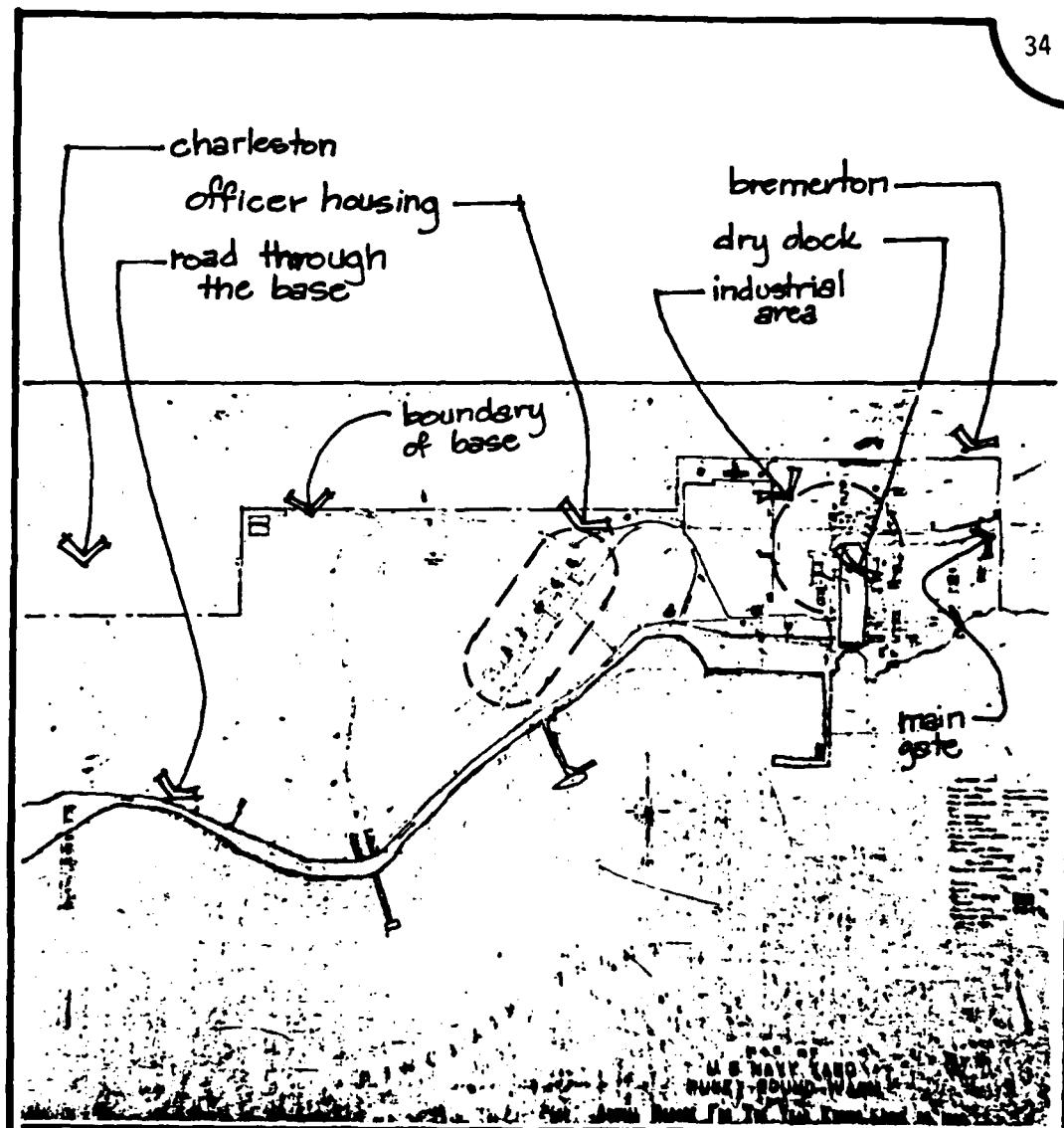


Figure 7

Plan of the Navy Yard, 1904



started in 1909 and was completed in 1913. The new dock was then the largest in the Navy inventory at that time and could easily handle the largest ships the Navy owned. The new dock was 827 feet long, 145 feet wide, and 38 feet deep. Improvements occurred not only at the Navy Yard but in other areas of Kitsap County.<sup>63</sup>

This formative period had been rich and varied in its forces and influence on the area's growth and development. The natural features and amenities of the site convinced two different commissions that the best location was on the Turner Peninsula next to Sinclair Inlet instead of the established centers of Seattle and Tacoma. The intense personal efforts by Senator Allen and Lieutenant Wyckoff got congressional approval to locate a navy yard and dry dock in the area. This decision and the resulting construction saw two new towns develop and compete for support of the navy yard. Charleston was the first town and seemed to be destined for great growth and expansion to the west of the yard. Land speculator, William Bremer, started the other town to the east and north and gave his own name to it. Bremerton. Growth was slow but Bremer encouraged development with the construction of a substantial pier, donation of land for schools and churches and other civic improvements. All looked lost at the end of the nineteenth century with the Navy almost closing the yard due to apathy and little funding. A concerted effort by local citizens and politicians saved the yard and spawned a new period of growth that continued until World War I.

The significant event during this phase of growth, however, was the shift in emphasis to the east side of the base, towards Bremerton and

away from Charleston. This provided the spark that Bremerton needed for its growth and vitality. This city then grew in size and influence so that by World War I it was the largest city in the county. Charleston, on the other hand, grew by more modest means and took a secondary role to Bremerton as an urban area in the region. The primary commercial and transportation linkages developed in Bremerton while Charleston saw some growth in residential areas.

This shift was occasioned by a number of factors. Most of the new construction in the yard occurred in the vicinity of the existing dry dock. The materials and workers needed to perform this work, could more easily get to their projects from Bremerton rather than coming through Charleston. The majority of navy yard workers that commuted by boat to the nearby towns of Manette or Port Orchard could make connections more easily from facilities in Bremerton than Charleston. Bremer's large pier was a main linkage to the water traffic in Puget Sound to Seattle and Tacoma, and was less than two blocks for the east edge of the base. The pier in Charleston, however, was over a mile and one-half to the west of the Navy Yard's industrial area. Many of the commercial interests (laundries, saloons, and retail outlets) in Bremerton benefited from the crews assigned to the ships in overhaul. Since the slips and piers that supported the ships were on the east side of the Navy Yard, it was again easier for the crews to walk into Bremerton than across the yard to Charleston. Finally, the Navy Yard itself recognized the importance of the linkage to the east (Bremerton) by designating that entrance as the main gate to the yard.

The increased tempo of facility construction and ship overhaul and repair provided an employment base that was attractive to people. The completion of the second dry dock gave the Navy Yard a repair capability that was unique on the west coast and assured the permanence of the base. The growth of Bremerton and, to a lesser degree, Charleston, saw the forests to the north of the yard gradually disappear and housing take its place as more people moved to the area. The future of the Navy Yard, Puget Sound, seemed bright and with it, the surrounding region.

## CHAPTER II NOTES

<sup>1</sup>Mary W. Avery, History and Government of the State of Washington, (Seattle: University of Washington Press, 1961), pp. 61-74.

<sup>2</sup>Ibid., pp. 75-77.

<sup>3</sup>Ibid., p. 145.

<sup>4</sup>Ibid., p. 155.

<sup>5</sup>Ibid., pp. 155-164.

<sup>6</sup>Ibid., pp. 188-189. Enabling legislation was actually passed by the U. S. Congress on February 22, 1889.

<sup>7</sup>Ambrose Barclay Wyckoff, Collection of letters dated between 1891 to 1907, cover letter signed October 31, 1908, Port Townsend, Washington, University of Washington Library, p. 1.

<sup>8</sup>Ibid.

<sup>9</sup>Ibid., p. 2.

<sup>10</sup>Kitsap County Historical Society, Kitsap County History; A Story of Kitsap County and its Pioneers, compiled by Kitsap County Historical Society Book Committee, (Seattle: Dinner and Klein, 1977), Book III, "History of Puget Sound Naval Shipyard," p. 4.

<sup>11</sup>Wyckoff letters, p. 2.

<sup>12</sup>Kitsap County Historical Society, Kitsap County History, p. 4.

<sup>13</sup>Ibid., p. 4.

<sup>14</sup>Secretary of the Navy, Report of the Commission to Select a Site for a Navy Yard on the Pacific Coast North of the Forty-Second Parallel of North Latitude (Washington: Government Printing Office, 1889), p. 5.

<sup>15</sup>Ibid., p. 6.

<sup>16</sup>Ibid., pp. 10-12.

<sup>17</sup>Ibid., p. 13.

<sup>18</sup>Ibid., The Commission noted that deep waters were not desirable for two reasons: first, ships have great difficulty anchoring in deep water, and, second, deep water precludes use of nets and mines as defensive measures.

<sup>19</sup>Ibid., p. 14.

<sup>20</sup>Ibid.

<sup>21</sup>Ibid., p. 18.

<sup>22</sup>Ibid., pp. 26-27.

<sup>23</sup>Ibid., p. 20.

<sup>24</sup>Ibid., p. 19.

<sup>25</sup>Ibid., pp. 24-25.

<sup>26</sup>Kitsap County Historical Society, Kitsap County History, p. 5.

<sup>27</sup>Ibid., The composition of this commission included the following: Richard W. Thompson, former Secretary of the Navy; T. C. Platt, ex-senator from New York; Colonel George H. Mendell, U. S. Army; Captain T. O. Selfridge, U. S. Navy; and Lieutenant A. B. Wyckoff, U. S. Navy. It is interesting to note that Thompson was Secretary when Wyckoff originally recommended the reservations of lands in 1880.

<sup>28</sup>Ibid.

<sup>29</sup>Ibid., p. 6.

<sup>30</sup>Walter R. Herrick, Jr., The American Naval Revolution, (Baton Rouge, Louisiana State University Press, 1966), pp. 10-11 and 83-85.

<sup>31</sup> Ibid., pp. 60-61.

<sup>32</sup> Ibid., pp. 71-74

<sup>33</sup> Wyckoff letters, p. 4.

<sup>34</sup> Ibid.

<sup>35</sup> Ibid., Wyckoff also relates that the idea of paying American dollars to the British for repairs was not all popular with the north-west shipping concerns.

<sup>36</sup> Ibid., p. 5. Wyckoff indicates that the Senate Committee was only going to authorize 100 acres for the dry dock. Stiff pressure from Wyckoff and Senator Allen forced the chairman to acquiesce and permit 200 acres; however, funds for the land purchase were cut to \$10,000 from the proposed \$25,000.

<sup>37</sup> Kitsap County Historical Society, Kitsap County History, p. 7.

<sup>38</sup> Wyckoff letter p. 6. This is actually a copy of the letter sent to Wyckoff by the Secretary of the Navy on March 17, 1891.

<sup>39</sup> Ibid.

<sup>40</sup> Kitsap County Historical Society, Kitsap County History, p. 8.

<sup>41</sup> Ibid., p. 8.

<sup>42</sup> Anonymous, miscellaneous facts concerning early Bremerton, Kitsap County Library. The specifics of the land purchase are as follows:

<u>Owner</u>	<u>Date</u>	<u>Acres</u>	<u>Cost</u>
H. Hensel	July 10, 1891	81	\$ 4,050.00
Berneth Olsen & Wife	July 11, 1891	21.38	1,069.00
Robert H. Jertson	July 13, 1891	42.87	2,143.50
William P. Sayard	Nov. 28, 1891	42	1,000.00
William Bremer	Dec. 18, 1891	5	250.00
Arthur Sciviner	May 24, 1891	*	1,000.00
	Sub-total:	190.25	\$ 9,512.50
	**Costs:		74.75
	TOTAL:	190.25	\$ 9,587.25

\*For mortgage on Sayard 40 acres

\*\*Abstracts, recording, deeds, etc.

<sup>43</sup> Kitsap County Historical Society, Kitsap County History, p. 7. The Congressional Act also required that full clear title be obtained on all lands, including tidelands, before any construction was to begin.

<sup>44</sup> Ibid., p. 8. This was the only account I was able to locate that indicated the navy's future plans for the station. I find it interesting that Wyckoff never mentioned the subject in his letters.

<sup>45</sup> Wyckoff letters, p. 11.

<sup>46</sup> Ibid., The stone was used at the entrance of the dock for two reasons: first, to form a good base and seal for the cofferdam, and, second, to resist attack and damage from torpedoes.

<sup>47</sup> Ibid.

<sup>48</sup> Kitsap County Historical Society, Kitsap County History, p. 11.

<sup>49</sup> Ibid., p. 9. It was reported that Wyckoff suffered from rheumatism and stomach trouble. His discomfort was aggravated, no doubt, by the fact that he and his family were required to live on a small ship tied to a pier at the base. Other housing was simply not available.

<sup>50</sup> Kitsap County Historical Society, Kitsap County History, "Bremerton: Its Yesteryears," p. 4.

<sup>51</sup> Ibid.

<sup>52</sup> Kitsap County Historical Society, Kitsap County History, "Shipyard History," pp. 7-8.

<sup>53</sup> Ibid., p. 8.

<sup>54</sup> Ibid.

<sup>55</sup> Kitsap County Historical Society, Kitsap County History, "Bremerton," p. 21.

<sup>56</sup> Herrrik, American Naval Revolution, pp. 222-223.

<sup>57</sup> Kitsap County Historical Society, Kitsap County History, "Ship-yard History," p. 10.

<sup>58</sup> Ibid., This commission was comprised of Senator J. B. Allen, Judge Thomas Burke and the Honorable E. O. Graves.

<sup>59</sup> Ibid.

<sup>60</sup> Ibid., p. 11.

<sup>61</sup> U. S. Department of the Navy, Report of the Secretary of the Navy, for the Year 1904, (Washington: Government Printing Office, 1904), Miscellaneous Reports, pp. 138-140.

<sup>62</sup> Kitsap County Historical Society, Kitsap County History, "Ship-yard History," p. 12.

<sup>63</sup> Ibid., this same period also saw the first expansion of other Navy facilities in the area. In 1904 the Navy bought a tract of land on Ostrich Bay for the purpose of building an ammunition depot. This facility was located about four miles to the west of the Navy Yard and was used for the assembly and storage of ammunition used by the Navy and Coast Guard ships. In 1914, the Navy began construction of the Naval Torpedo Station at Keyport, about fifteen miles north of the yard. This base provided facilities for the assembly, testing, and storage of torpedos and mines for the Pacific Fleet.

## CHAPTER III

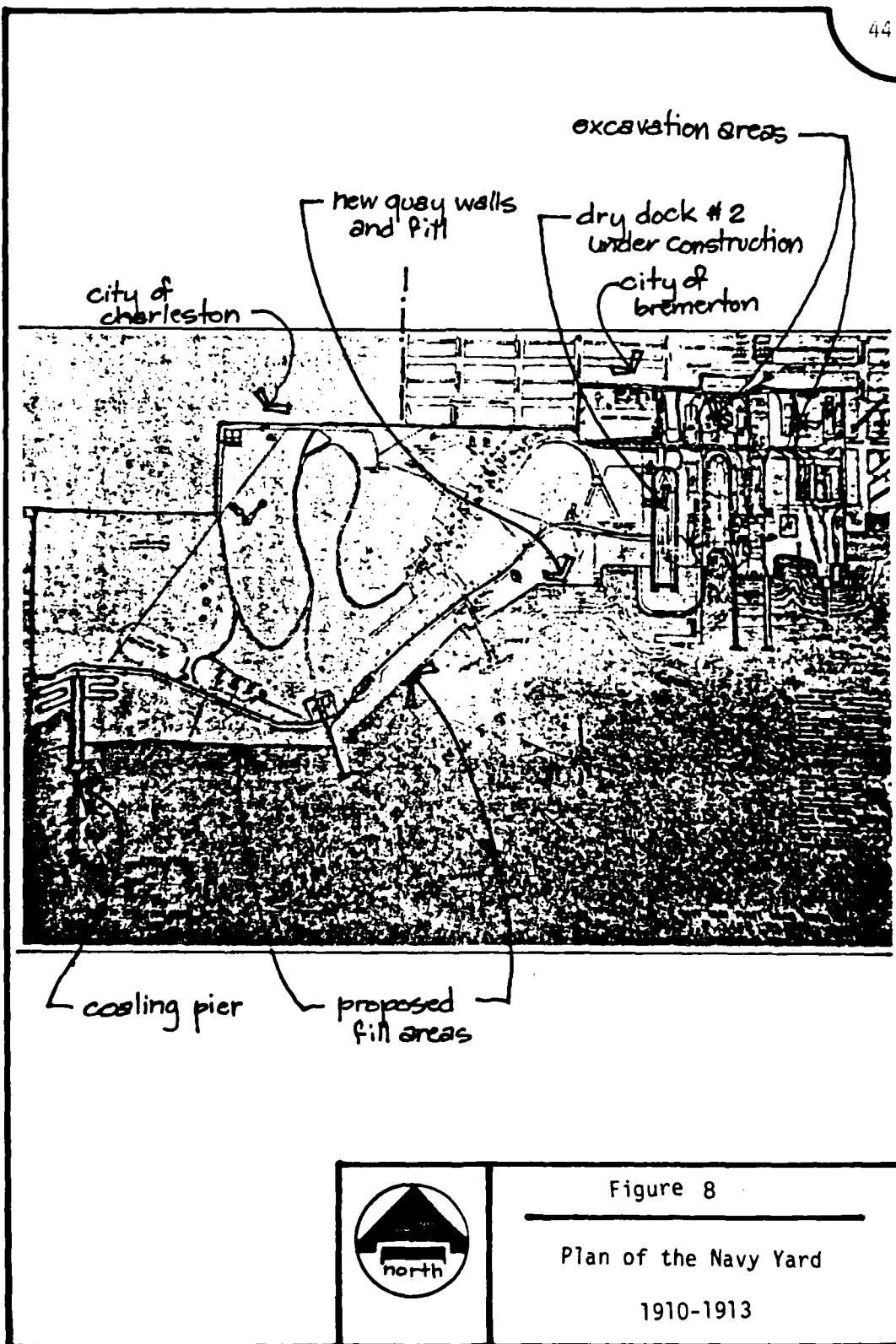
### THE MIDDLE YEARS AND GROWTH--1915-1938

#### Pre-World War I Growth

The completion of the new drydock in 1913 gave the Navy Yard, Puget Sound a unique stature. The yard was now the premier repair facility for the west coast and it could handle the largest ships in the Navy's inventory. The Panama Canal was open by this time and there was a much freer movement of ships from one coast to the other. The increased capacity at the yard was reflected in a larger workload of ship repair and overhaul. By 1916, employment at the yard rose to over 2,000 workers and adjacent cities of Bremerton and Charleston benefited from growth.<sup>1</sup>

Construction in the yard continued to add new facilities. In 1913, a new general foundry building was completed, one more fitting-out pier for battleships and two more living quarters.<sup>2</sup> In 1914, railroad tracks were installed around Dry Dock 2, construction was started on two new piers (Piers 4 and 5) while work continued on Pier 6, and an extension of Pier 8 was begun.<sup>3</sup> Figure 8 illustrates this expansion in the yard.

The growing tensions in Europe finally erupted into war in 1914. By 1916, most of Europe was involved in the war and there was great pressure on the United States to enter on the side of the allies (Great Britain and France) against the German-Austrian alliance. President Woodrow Wilson was careful to maintain a neutral posture but the sinking of unarmed ships by German submarines was difficult to bear.<sup>4</sup> The war



in Europe kept most of the Navy's assets busy in the Atlantic but the west coast could not be forgotten. Situations on our own continent were cause for reservation and caution. The revolution in Mexico with assumption of power by Victoriano Huerta in 1913 was championed by many of the European powers but bitterly resented by President Wilson.<sup>5</sup> Wilson stood his ground and actively supported groups vowing to overthrow Huerta. His support actually included seizing and blockading the Mexican port of Veracruz to cut off supplies to Hyerta's forces. Huerta was eventually defeated and a more pro-United States government took his place. Civil war continued in Mexico in 1915 and 1916 and occasionally United States forces were needed to quell minor border disturbances. The situation cooled by 1917 but there was still lingering doubt in the minds of strategic planners that all was finished.<sup>6</sup>

Despite all of Presidents Wilson's efforts to the contrary, the United States' involvement in the war in Europe seemed inevitable. The uneasiness of the border situation with Mexico was cause for alarm. In 1916, President Wilson called for a general increase in the United States forces. The matter was bitterly discussed in congress and some increases were made.<sup>7</sup> One outcome of this debate was the appointment of the Helm Commission to study the readiness of Pacific Coast bases and their ability to support the fleet operations.<sup>8</sup> The Helm Commission made a series of five reports to congress between December of 1916 and September of 1917.<sup>9</sup> The reports dealt with all phases of the defense of the Pacific Coast from California to Alaska and called for construction of

many new bases for air and land support as well as upgrading existing bases.<sup>10</sup> The Navy Yard, Puget Sound was recognized as one of two navy yards of first class standing on the Pacific Coast because of its strategic location, physical characteristics, industrial advantages and defensibility. It is significant to note that the Helm Commission no longer endorsed Mare Island (Puget Sound's chief competitor) as a first-class yard. Rather, development of a new shipyard in San Francisco Bay was encouraged.<sup>11</sup> Analysis of selected excerpts from a summary of the Helm Commission Report<sup>12</sup> is important in understanding the impact on Puget Sound. The rapid expansion of the United States Fleet and the planned growth through 1921 would see a significant increase in ships and the need to support them. The emergency conditions in Europe occupied eighty per cent of the U. S. Fleet. If these units were required in the Pacific, there were not adequate facilities to care for their needs. Accordingly, the Puget Sound area should be considered a main fleet base and be developed to support a greater fleet presence. The Navy Yard itself would need increases in its docking, berthing, repair, storage and other facilities to meet this need. Further, the report indicates for the first time the need to develop the shipbuilding capability of the yard, (although this need is subordinate to the need of ship repair and maintenance).<sup>13</sup> The report recommended \$2,500,000 be appropriated for construction of a new dry dock, a new steel floating dry dock, extensive grading and filling behind new seawalls to increase industrial work space and new fitting-out piers. The plan also called for construction of new

bases in the area to support aircraft and submarine forces. These new base requirements did not actually happen until much later but the Navy Yard, Puget Sound did benefit greatly from the findings of the Helm Commission.

#### The War Years

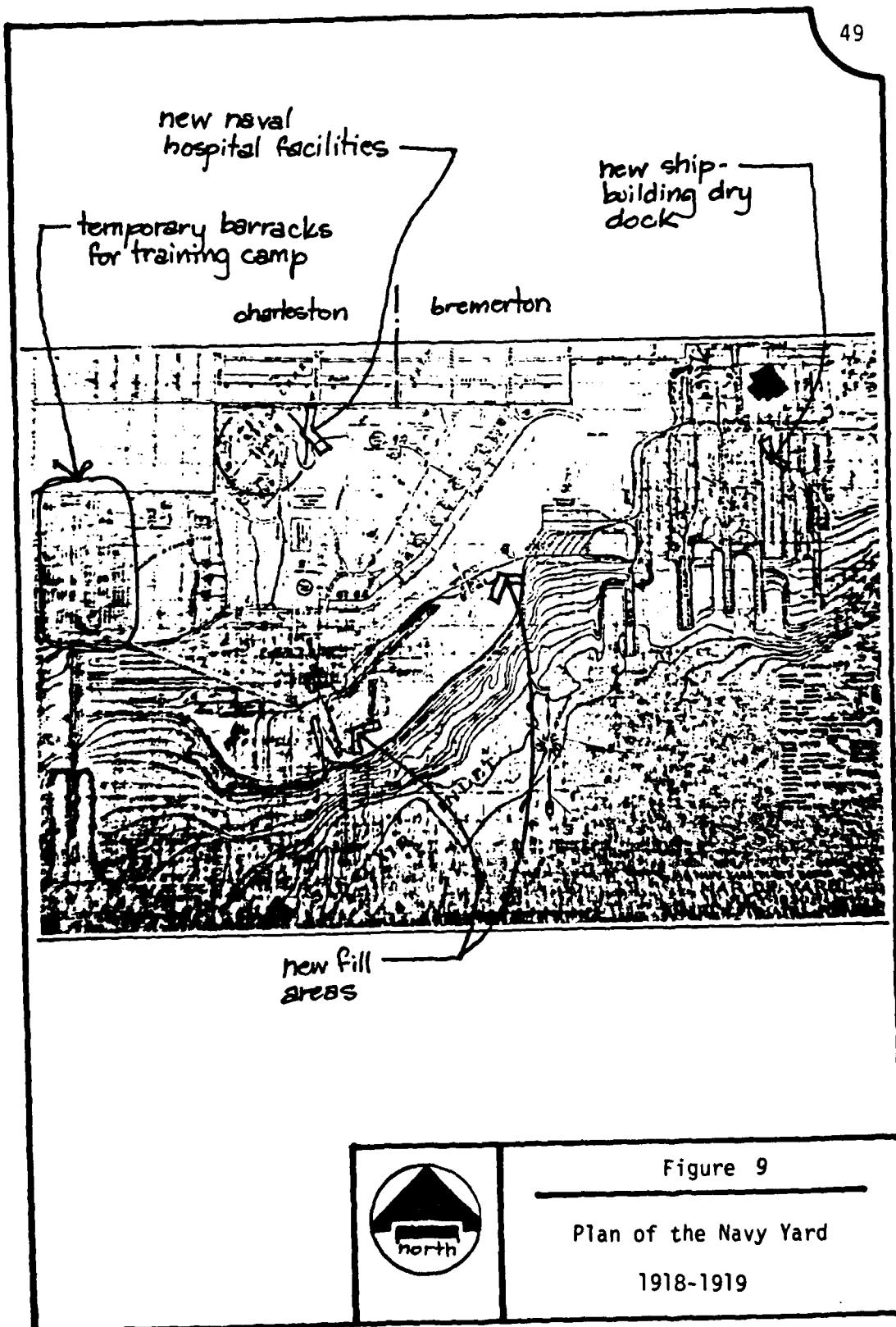
The war-time emergency in the Atlantic seemed to relegate Puget Sound to a secondary role in the eyes of the Navy. Most of the required ship repair work would be done in eastern yards. The reports of the Helm Commission helped keep the matter in proper perspective. The Navy recognized that even though the Navy Yard, Puget Sound would not be a front line repair yard for the war effort, it could function as a construction yard for the shipbuilding program.<sup>14</sup> This is important because it not only guaranteed adequate work for the yard but the opportunity for further expansion.

The immediate facility improvements in 1916 and 1917 included general storehouses, shipbuilding ways, fuel storage tanks, hospital buildings, training camp and, finally a dry dock.<sup>15</sup> This new dock was unique in that its intended use is as a shallow dry dock for shipbuilding purposes. Figure 9 shows the development at the yard during this period. Normally, inclined shipways were used for construction. This novel approach to shipbuilding permitted quicker assembly, minimized launching difficulties and reduced overall costs. The yard was able to be competitive with any yard for construction of small craft. This new role as a constructor of ships as well as being a repair yard brought a great increase in the

number of employed workers. By 1918 over 6,500 persons were working at the yard. It was not until World War II that this total was exceeded. The war-time ship building effort was substantial.<sup>17</sup>

The Navy Yard also became the main mobilization and training camp of the area. Various reserve units and state militia were called up to active duty with the United States' entry into the war in 1917. Originally, the men were housed on two receiving ships anchored at the yard (the U. S. S. Philadelphia and U. S. S. Boston) but later moved to a tent camp. In November, 1917, more permanent wooden structures were completed that would house the new recruits and these structures were built on flat lands at the south-west corner of the base. Ultimately, they were capable of housing 5,000 men.<sup>18</sup> See Figure 9 for the location.

The pressures of all this expansion saw the need for additional lands at the base. The Navy did make additional purchases of land on the east and west sides of the base as shown in Figure 10. Although the total purchased was just over twenty-five acres, its cost was significant. The original 190 acres bought by Lieutenant Wyckoff in 1891 cost \$9,587, while the 4.33 acre parcel adjacent to downtown Bremerton cost \$223,300.<sup>19</sup> It was clear that the Navy could not satisfy its need for more space by land purchase alone. The answer was found by regrading efforts. New quay walls were built and the area behind them filled with rock and soil excavated from the ridge adjacent to the industrial area. This massive cutting and filling operation permitted the yard to reclaim over one-hundred-twenty acres of land for new use.<sup>20</sup> This work is also shown in Figure 10.



land purchases (1910)

tract ① 20.08 acres \$ 21,600  
tract ② 1.33 acres \$ 16200.  
tract ③ 1.33 acres \$ 225,300

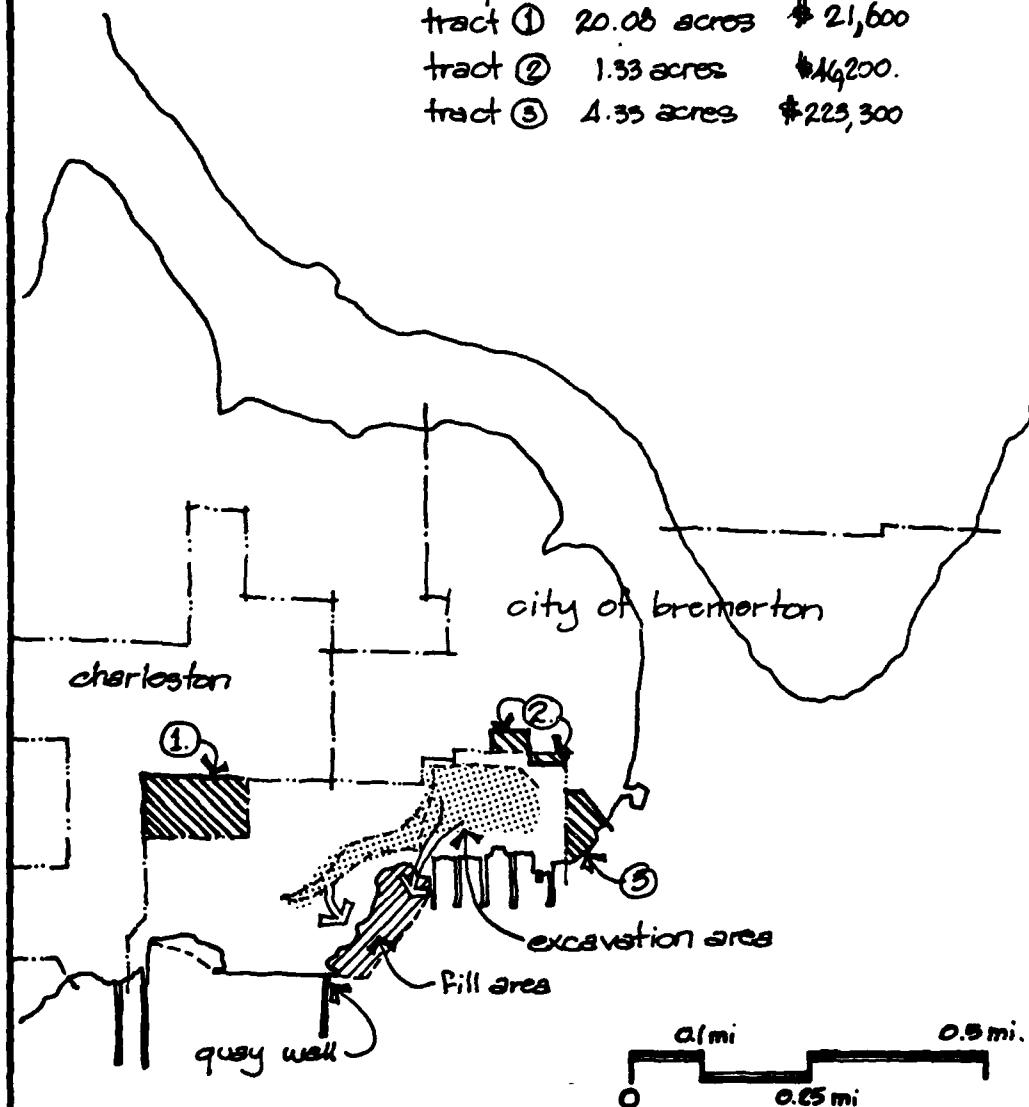


Figure 10:

Area Plan and  
Development Potentials.



This work continued the intensity of physical development in the eastern section of the yard that began in the beginning of the century. The limited space in the vicinity of the drydocks forced close, tight siting of new buildings. New pedestrian gates were opened on the north side of the yard for workers. Vehicular traffic still followed the main road through the base with the main entrance at the Bremerton side and another gate at the Charleston side. Housing and other support facilities (barracks, hospital and administrative buildings) were developed in the center and western portions of the base. Effectively, the Navy Yard was being functionally divided: the industrial work in the eastern section and southern waterfront areas, and non-industrial, personnel support to the north and west. The demarkation between the two zones was formed by the physical boundary of the bluff created by the regrading efforts.

Clear patterns were also developing in the adjacent cities of Charleston and Bremerton. As noted before, Charleston's growth was not as great as Bremerton; however, it is worthy of mention. A commercial and retail center developed along Callow Avenue that connected with the western gate to the yard. Residential areas grew adjacent to the west and north sides of the yard. The hills to the immediate west discouraged growth in that direction. On the other side of the yard, Bremerton was developing as the major city in the area. A large business district had developed along Pacific and Washington avenues. The pier at the foot of First Street was the main connection to the rest of Puget Sound by boat or ferry. Physical constraints of the Navy Yard on one side and

water on the other forced residential growth to the north and then west towards Charleston.

#### The City's Growth

This period of rapid growth in the workforce of the Navy Yard, Puget Sound was not without affect on the cities of Bremerton and Charleston. Although no accurate records indicate the population in the war years, the U. S. Census count in 1910 was 4,055 while it jumped to 12,256 by 1920 (there are consolidated figures for Bremerton and Charleston).<sup>21</sup> The growth of Bremerton could be traced to two major influences: first, the growth of the Navy Yard workload increased and, second, due to the annexation of Manette into the Bremerton city limits.

The remarkable increase in the work force of the Navy Yard caused significant impacts on the adjacent cities. The supply of adequate housing for both families and single persons was quickly depleted. New private construction of houses was slow in coming. Many owners of existing houses converted unused basements and other rooms into rental housing but this was not enough.<sup>22</sup> The federal government, through the sponsorship of the United States Housing Corporation, helped the situation with the construction of numerous housing units in Bremerton and Charleston.<sup>23</sup> The housing was built as war emergency construction for war workers. It was recognized that the needs of the war effort could not be met without federal assistance. The government first built a hotel with cafeteria on land already owned by the navy. This hotel provided rooms for 350

people and was located immediately north and adjacent to the Navy Yard for the convenience of the residents. An apartment house for 45 families was built about four blocks north of the yard.<sup>24</sup>

There was still need for additional units, but there was disagreement between the Navy officials and the city regarding the site for a new housing area.<sup>25</sup> The Navy advocated purchase of a new tract of land about a mile north of the yard and the construction of a new subdivision of housing. The site, however, had no utilities to it and the cost and time of providing water, sewers and the like was high. The alternative, supported by local residents and city officials, was to build the housing as "in-fill" between existing housing assets on vacant lots. This would be quicker and existing utilities could handle the growth. Since time was of the essence, the latter, or "in-fill," plan was adopted. The government built 250 units of single-detached houses in this fashion in both Bremerton and Charleston.<sup>26</sup> Figure 11 indicates the plan of this construction and the style of the houses is shown in Figure 12.<sup>27</sup> The plan to build a 287 unit subdivision was authorized when officials saw that 250 units would not be adequate in numbers. The development was cancelled however, when the armistice was signed in November, 1918.

The "in-fill" plan provides a certain cohesiveness to the cities of Bremerton and Charleston. The construction of new houses on vacant lots in between existing houses helps clarify the texture and pattern of the town. The structures built were modest one and two-bedroom bungalows that were distinctive in style yet unpretentious in their surroundings.

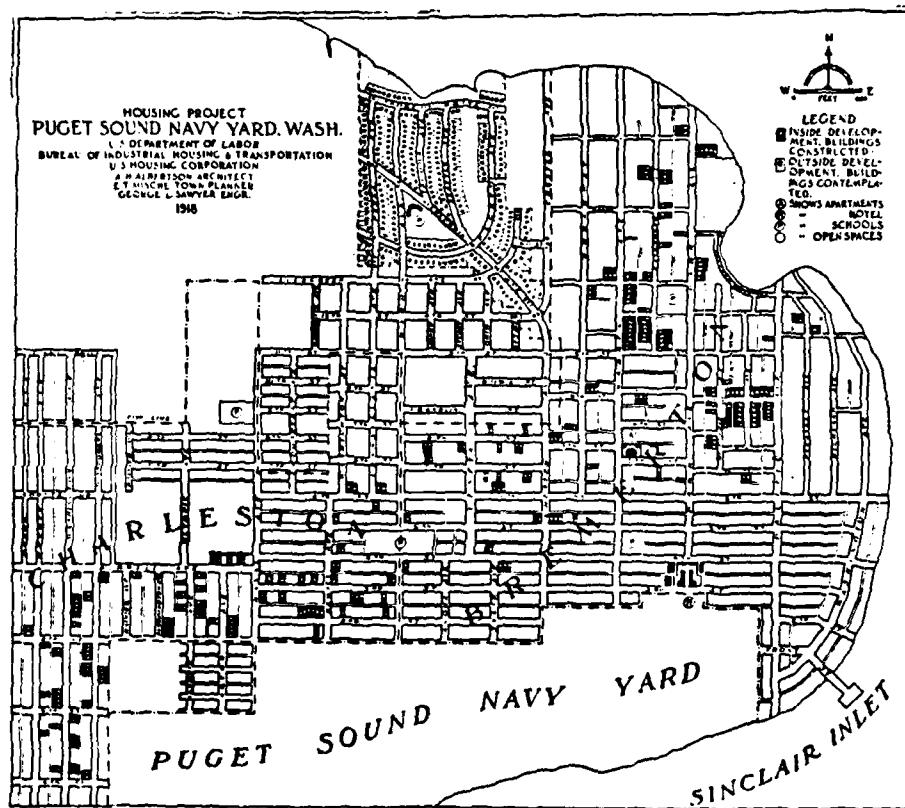


Figure 11:



Plan of the U. S. Housing Corporation Construction.

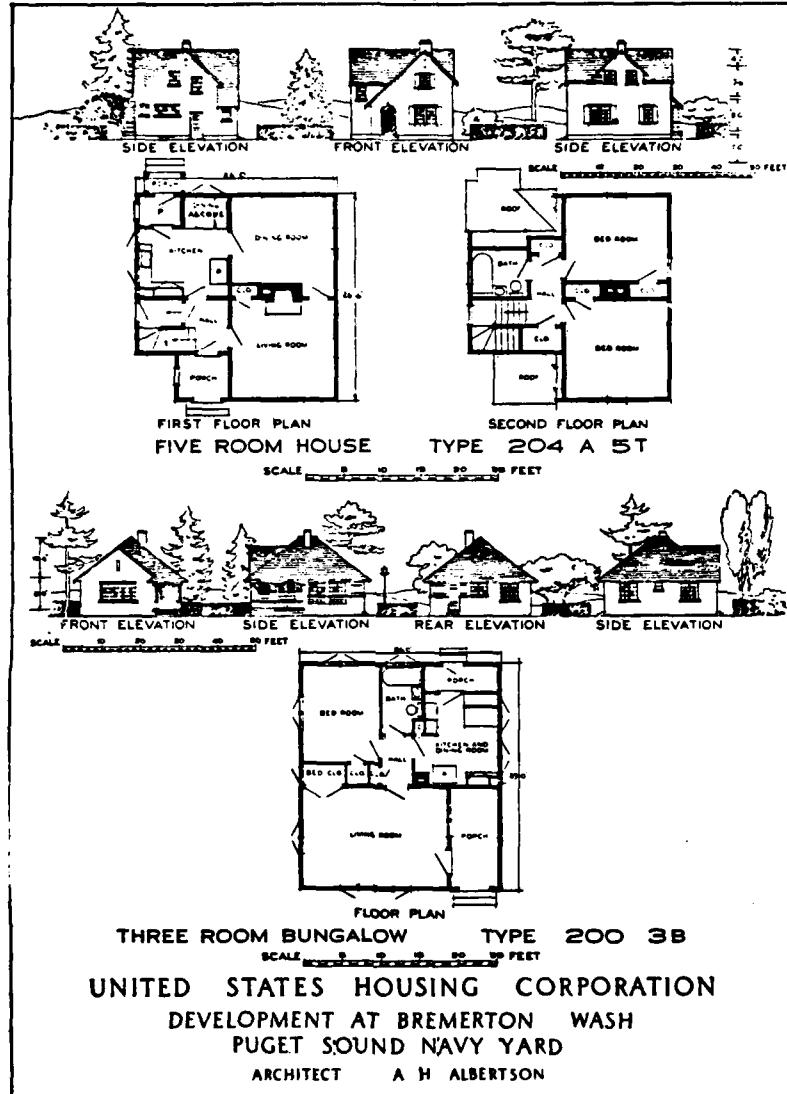


Figure 12:

Details of U. S. Housing  
Corporation Houses.

They, no doubt, added to the quality of their neighborhoods. The proposed subdivision would have been a more radical departure from the existing conditions had it been built. The strict grid-iron platting would have been interrupted with curvilinear streets that responded to the terrain. The houses would have been similar to those built as "in-fill" units but the character of this new neighborhood would be quite different. There would be a sense of designed harmony to the area that would distinguish it from any other area in the city.

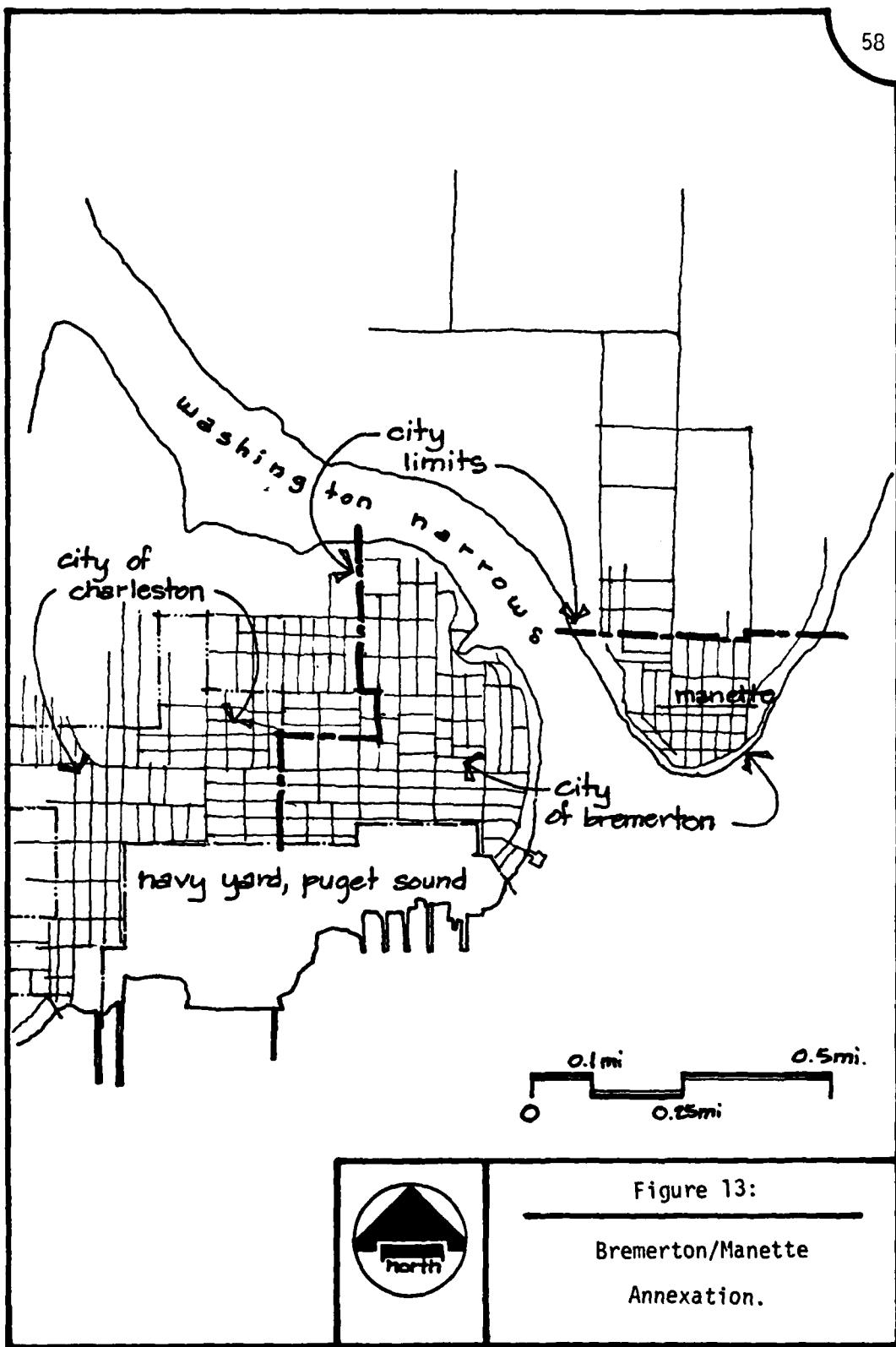
The rapid growth in the vicinity had a major impact on the water distribution system. For years the system had not received the improvements it needed because of a legal question of ownership.<sup>28</sup> The water system had been started by a number of individuals just after the turn of the century (prior to that, wells and creeks were sufficient for the needs). In 1912, the Bremerton City Council decided to exercise the purchase option granted in original water franchise.<sup>29</sup> Specific requirements in the contract specified basis of payment for the entire water system but the owners did not feel that they were being compensated fairly. The matter was unresolved until 1917. Needless to say, the Navy was less than satisfied with the mediocre service. The Navy had built a 2,600,000 gallon reservoir on the station to supply its needs in the event of a one or two-day interruption in water service. The rapid increase in workers and needs for water virtually taxed the system to its limits. A meeting was held between city and Navy officials and the city agreed to make the necessary improvements in the storage and distribution

systems.<sup>30</sup> The watershed lands had more than adequate reserves (anticipated and verified by the Mahan Commission almost thirty years before), and the city made the necessary improvements that facilitated growth.

This period of war emergency also saw Bremerton make its first outward expansion with its annexation of Manette. Up until this time, Bremerton comprised an area of about 360 acres. Manette added 149 acres to that total as shown in Figure 13. Manette had originally been one of the major sawmill sites in the area in the 1880's but never experienced the rate of growth that came to Bremerton or Charleston. Many of the residents relied on Bremerton and the Navy Yard for employment and commerce.<sup>31</sup> Transportation between Bremerton and Manette was by boat only. The local water system was outmoded and could not handle the needs. The only answer to this problem was a connection to the Bremerton water system. This dependence on Bremerton for their very livelihood caused citizens of Manette to consider consolidation with Bremerton. The matter was put to a vote and the residents of both areas agreed to the annexation.<sup>32</sup> This event was significant to the future of Bremerton because it did allow the possibility of expansion along the east side of the Washington Narrows. Until then, Bremerton had been limited in its growth potential on all sides--water to the north and east, the Navy Yard to the south, and Charleston to the west.

#### Post War and Depression

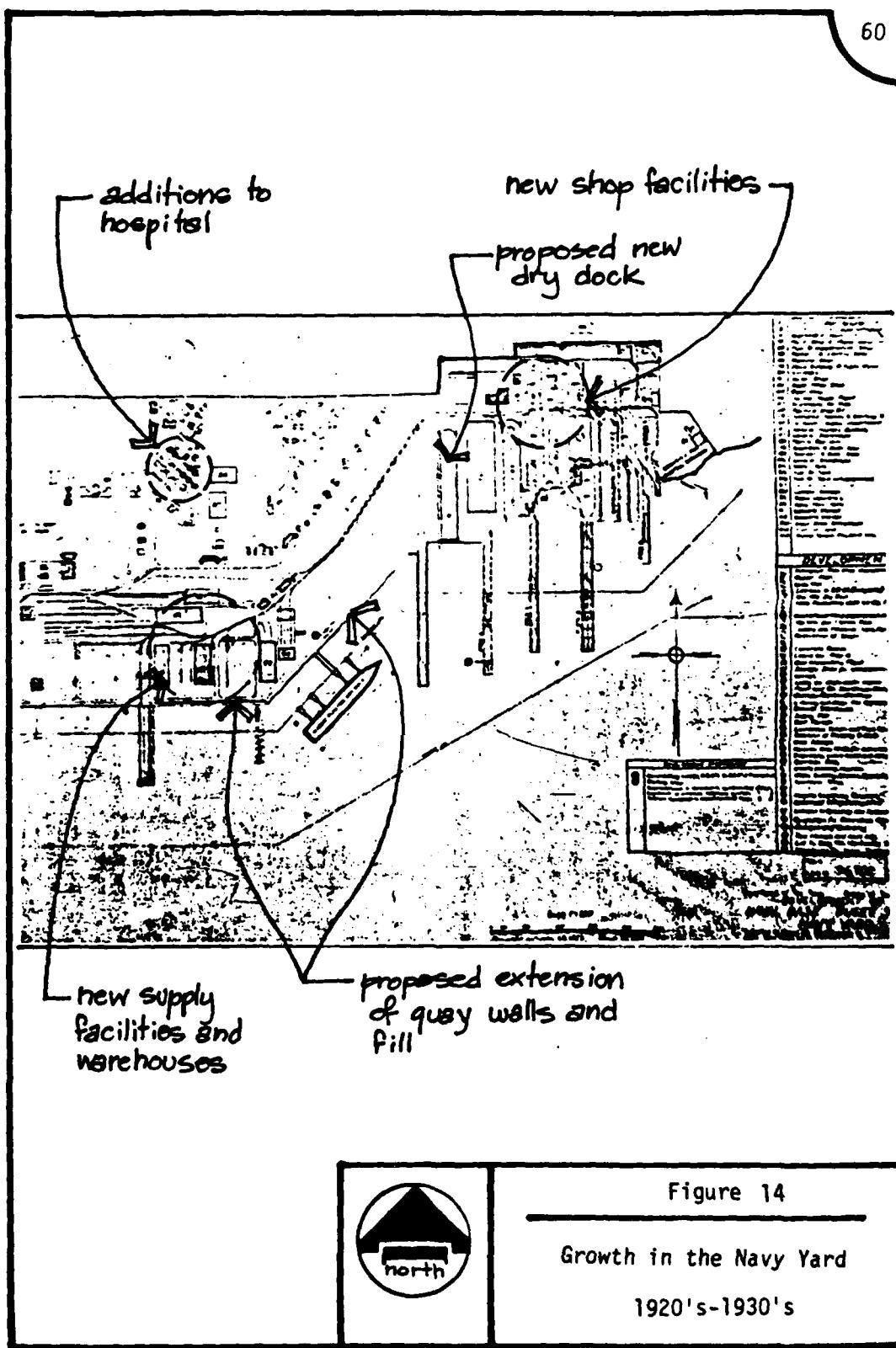
The employment at the Navy Yard, Puget Sound remained high until 1921 when the final work authorized under war-time legislation was completed.



Despite efforts by local officials at the yard, the workload dropped off to the point that workers were actually released.<sup>33</sup> Construction of new ships was slow in authorization and repair work was also slow. Generally, post war eras see a drastic decline in military authorizations and this was no exception. This next period of time (1921 to 1937) saw the influence of the Navy Yard wane as a dominant force on the city of Bremerton and other factors take importance as shapers of development.

Facility construction at the yard was centered mostly on waterfront work. In 1922, the existing Pier 5 (made of wood) was removed and replaced with a reinforced concrete pier that was 1,200 feet long. The regrading and backfilling operations continued to reclaim usable land for the yard's industrial area.<sup>34</sup> 1923 saw extensions to the quay walls and Pier 4.<sup>35</sup> In 1925, a new 1,200 foot long fitting-out pier was built.<sup>36</sup> In 1930, Dry Dock Number 2 was extended to accommodate the new aircraft carriers (U. S. S. Saratoga and U. S. S. Lexington) operating in the Pacific waters. Except for the installation of the 250 ton Hammerhead crane in 1933, little happened until the massive Navy buildup that began in 1938. Figure 14 illustrates the physical growth of the yard in this period.

Ship construction maintained a slow pace during the period. Four ships were built in the 1920's: the U. S. S. Medusa, a 10,600 ton repair ship was completed in 1924; the U. S. S. Holland, an 11,570 ton submarine tender was completed in 1926, and two cruisers, the U. S. S. Louisville



and the U. S. S. Astoria. Construction of eight destroyers was authorized during the 1930's, which averaged two ships per year in the docks.<sup>37</sup> The work force dropped from the 1920's average of 4,200 to a post-war low of about 1,300 people by 1930.<sup>38</sup> It was not until 1936 that employment started on the rise again.

The reductions in the Navy Yard had its affect on Bremerton and Charleston as well. The 1930 U. S. Census indicates that the population actually dropped 2,086 persons, or 17 percent from the 1920 census to just over 10,000 persons in the city.<sup>39</sup> The close relation of the prosperity of the shipyard and the city was clearly established. Despite this adversity, the city of Bremerton experienced two events that facilitated later growth and development potentials.

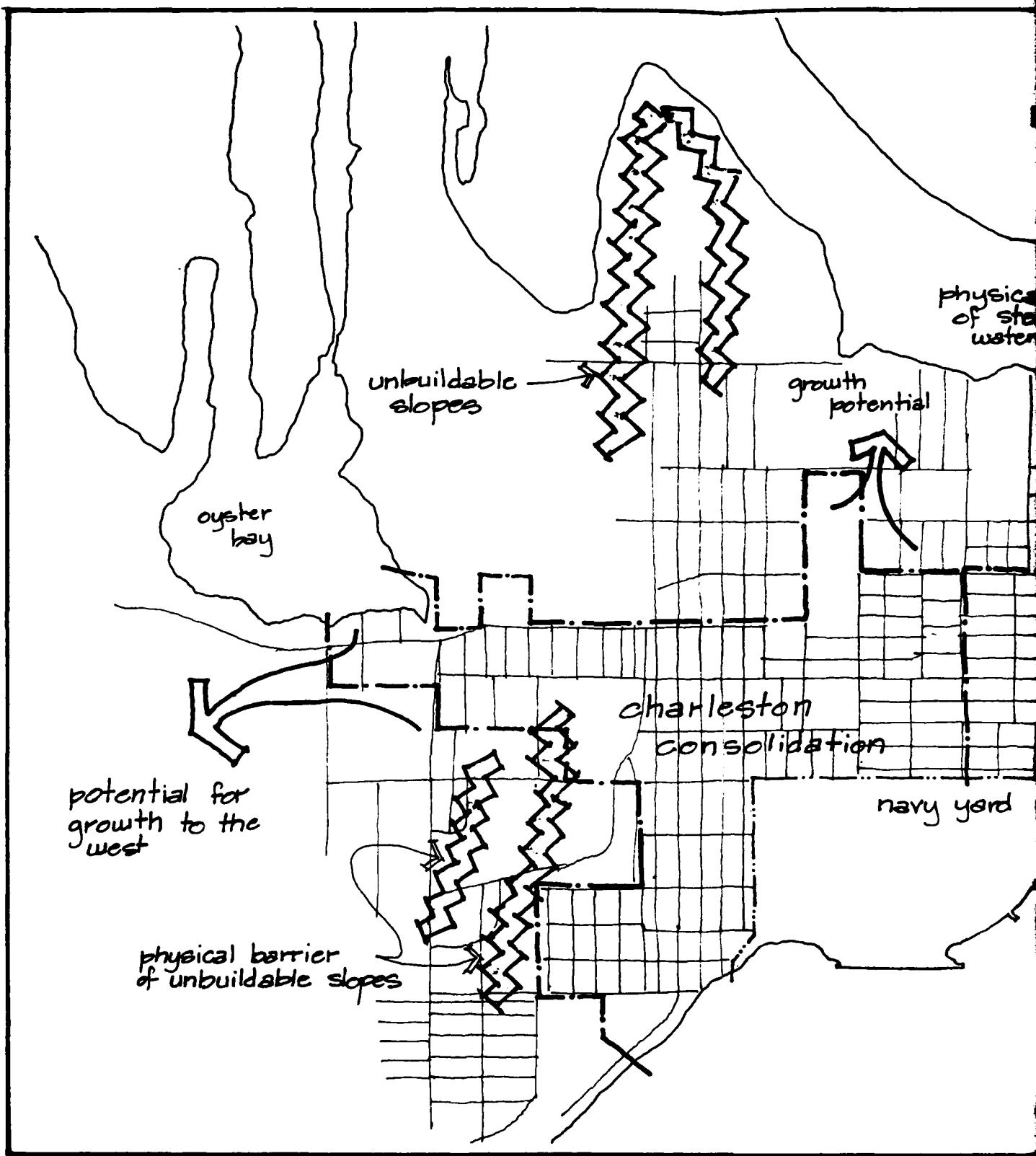
The first event was the decision to construct a bridge between Bremerton and Manette. The close relation between these two areas was discussed earlier but their physical connection was long in coming. The only opportunity available for Bremerton to expand to the east and north was to develop this linkage. The subject of building the bridge had been discussed for some time but it was not until 1926 that the City Council of Bremerton first granted a franchise to cover the construction of a toll bridge across the narrows and, second, called for a general election to approve or disapprove of the action.<sup>40</sup> The election was held in December of 1926 and the voters approved the measure by an overwhelming majority. Funding delays prevented work from actually starting until 1929 but the bridge was completed and open for use in 1930.<sup>41</sup> This

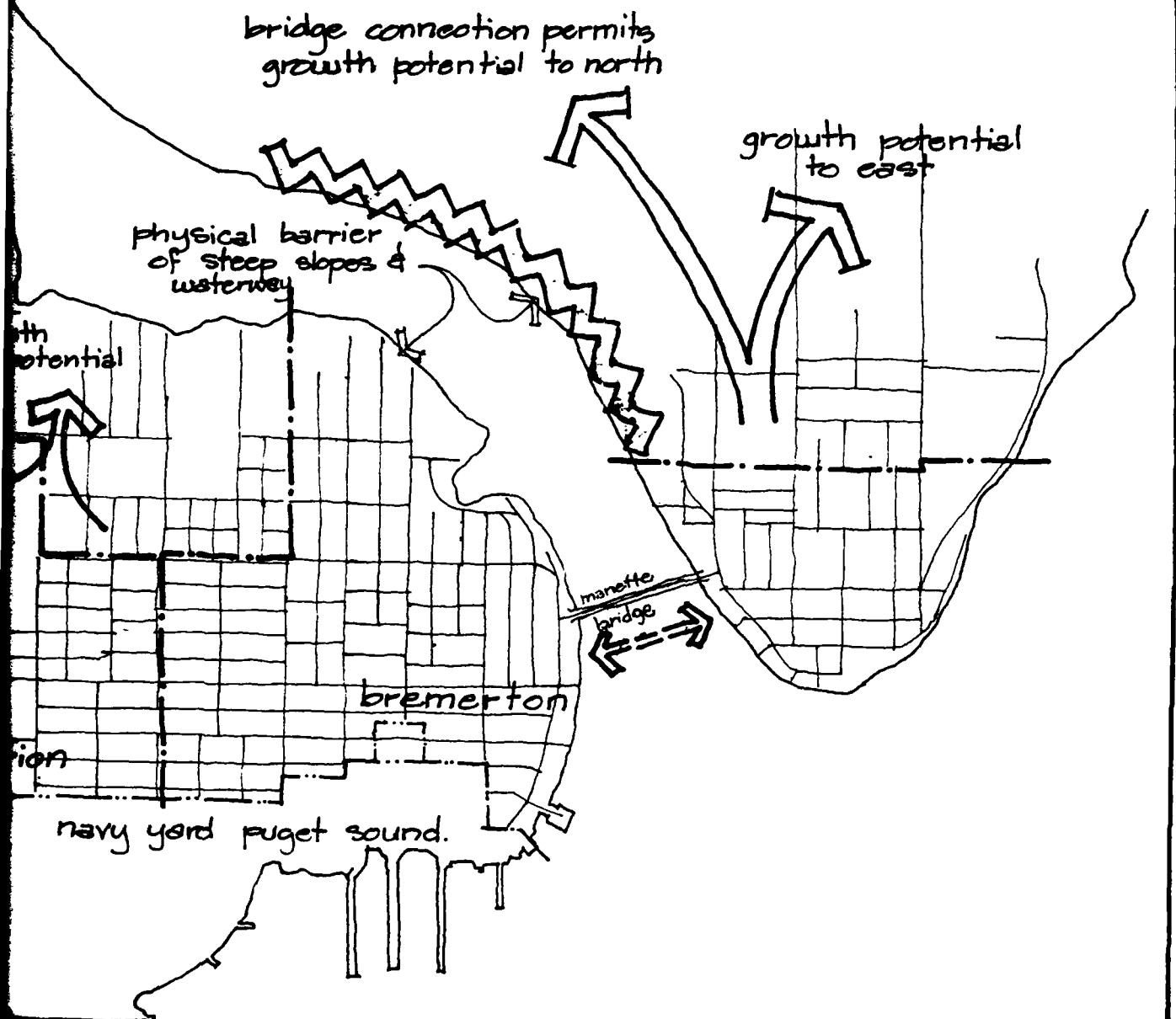
bridge inspired the building of a new county highway that linked the central and north Kitsap county areas with Bremerton. Manette saw growth with the completion of the bridge. The potential for future growth was the real significance of the completion of the bridge. This potential was explored with the massive increases of World War II and the need for Bremerton to grow to the east and north.

The second major event was the decision of the cities of Bremerton and Charleston to consolidate in 1927. As mentioned before, Bremerton was limited in physical growth on all sides. Charleston faced much the same dilemma. The cities shared a common boundary along what is now called Naval Avenue. The growth potential for each city was limited and was, of course, affected by the fortunes of the Navy Yard. It became apparent to those of perception that there was a lot of unnecessary duplication of efforts and services.<sup>42</sup> Two police departments, two city governments, two fire departments, all relying on the same basic resource, the navy yard, seemed superfluous. The subject of consolidation had been discussed as early as 1903, but each city kept its autonomy.<sup>43</sup> It was not until the late 1920's that the conditions were right for the move to be made. The Charleston City Council passed a resolution on March 13, 1927 that called for a special election to determine whether or not consolidation should occur. Bremerton followed with a similar measure on March 26, 1927, after much debate in the council. The election was held on May 2, 1927, and the results of both city's elections indicated that the citizens were in favor of the consolidation (Bremerton voted 1,021

for the proposition with 172 against and Charleston voted 636 for and 277 against).<sup>44</sup> A resolution was drafted which decreed that the consolidation of the two cities would take effect on January 1, 1928. Since Bremerton had the largest population at the time, its name was used for the new, combined city. This single action more than doubled the size of Bremerton by adding 845 acres. Most important though, was the ability of this metropolitan area to now function as single entity instead of two rival factions..

The net result of this era is significant. For once, the Navy Yard had little direct influence on the growth of the city which more than doubled in size. A physical linkage to the east and north was completed that allowed expansion capability into new areas. The consolidation with Charleston permitted exposure to lands north and west that would be vital to future expansion plans dictated by growth of the Navy Yard in World War II. The potentials for the city are illustrated in Figure 15. The stage is now set for the most rapid era of growth ever experienced by the base and the city.





0 .1 mi.      0.5 mi.  
0      0.25 mi.



Figure 15:  
Consolidation With  
Charleston and Potentials.

## CHAPTER III NOTES

<sup>1</sup>Kitsap County Historical Society Kitsap County History, "Ship-yard History," p. 14.

<sup>2</sup>U. S. Department of the Navy, Report of the Secretary of the Navy, for the Year 1914, (Washington: Government Printing Office, 1914), Miscellaneous Reports, p. 139.

<sup>3</sup>U. S. Department of the Navy, Report of the Secretary of the Navy, for the Year 1915 (Washington: Government Printing Office, 1915), Miscellaneous Reports, p. 178.

<sup>4</sup>Encyclopedia Britannica, 15th ed., S. V., "History of the United States."

<sup>5</sup>Ibid., Wilson was revolted by Huerta's bloody rise to power and constantly pressured for the dictator to step down and permit free elections.

<sup>6</sup>Ibid.

<sup>7</sup>Ibid.

<sup>8</sup>U. S. Department of the Navy, "Brief of Specific Recommendations of the 'Helm' Commission, Naval Unpreparedness of the Pacific Coast from San Diego, California, to Dutch Harbor, Alaska," dated May 15, 1918, University of Washington Library, p. 3.

<sup>9</sup>Ibid., p. 2. The five reports of the Helm Commission were submitted as follows: Report I, dated December 30, 1916; Report II, dated January 25, 1917; Report III, dated January 31, 1917; Report IV, dated May 14, 1917; and, Report V, dated September 29, 1917.

<sup>10</sup>Ibid., pp. 4-5.

<sup>11</sup>Ibid., p. 5 and pp. 12-13.

<sup>12</sup>Ibid., pp. 6-8.

<sup>13</sup>Ibid., p. 15-17.

<sup>14</sup>Kitsap County Historical Society, Kitsap County History, "Shipyard History," p. 14

<sup>15</sup>U. S. Department of the Navy, Report of the Secretary of the Navy, for the Year 1916, (Washington: Government Printing Office, 1916) p. 213.

<sup>16</sup>Sixtieth Anniversary Issue, The Salute, Puget Sound Naval Shipyard, Bremerton, Washington, September 14, 1951.

<sup>17</sup>Rear Admiral G. S. Freeman, U. S. N., "The Puget Sound Navy Yard," Transactions: The Society of Naval Architects and Marine Engineers, November, 1941, p. 33. Rear Admiral Freeman related that the war-time construction included the following: two 840-ton minesweepers; twenty-five 75-ton submarine chasers; seven 1,000-ton ocean-going tug boats; seven submarines of various sizes; two 10,600-ton ammunition ships and over seventeen-hundred small wooden boats.

<sup>18</sup>Kitsap County Historical Society, Kitsap County History, "Shipyard History," p. 14.

<sup>19</sup>Ibid., pp. 2-3.

<sup>20</sup>Ibid., p. 14.

<sup>21</sup>U. S. Census.

<sup>22</sup>Kitsap County Historical Society, Kitsap County History, "Shipyard History," p. 15.

<sup>23</sup>U. S. Department of Labor, War Emergency Construction (Housing War Workers), Report of the United States Housing Corporation, Volume II Houses, Site Planning, Utilities), (Washington: Government Printing Office, 1919), p. 319.

<sup>24</sup>Ibid.

<sup>25</sup>Ibid.

<sup>26</sup>Ibid., p. 320.

<sup>27</sup> Ibid., pp. 321-322.

<sup>28</sup> John H. Short, "History of the Bremerton Water Department" (report prepared April 25, 1962), Bremerton City Engineering Department, pp. 11-14.

<sup>29</sup> Ibid., p. 11.

<sup>30</sup> Ibid., p. 15-16.

<sup>31</sup> Kitsap County Historical Society, Kitsap County History, "Bremerton History," p. 16.

<sup>32</sup> Ibid., p. 18.

<sup>33</sup> Puget Sound Naval Shipyard the Salute, September 14, 1951.

<sup>34</sup> U. S. Department of the Navy, Report of the Secretary of the Navy, for the Year 1923 (Washington: Government Printing Office, 1923), p. 202.

<sup>35</sup> Ibid.

<sup>36</sup> U. S. Department of the Navy, Report of the Secretary of the Navy for the Year 1926 (Washington: Government Printing Office, 1926), p. 121.

<sup>37</sup> Freeman, "Puget Sound Navy Yard," p. 33.

<sup>38</sup> Puget Sound Naval Shipyard The Salute, September 19, 1951.

<sup>39</sup> U. S. Census.

<sup>40</sup> Short, "History of Bremerton Water Department," p. 21.

<sup>41</sup> Ibid., p. 22.

<sup>42</sup> Ibid., p. 19.

<sup>43</sup>Kitsap County Historical Society, Kitsap County History, "Bremerton History," p. 12. The first indication of any idea to consolidate the two cities occurred as a measure before the Charleston City Council in 1906 in honor of the devotion and influence of the navy yard commandant by the same name.

<sup>44</sup>Short, "History of Bremerton Water Department," p. 20.

## CHAPTER IV

### WORLD WAR II--THE BOOM YEARS--1938-1945

#### The Pre-War Emergency

The late 1920's and early 1930's were marked by seriously restricted budgetary limitations throughout the entire Navy. This was certainly the case for the Puget Sound Naval Shipyard as described by the previous chapter. Not only was there little new facility construction at the yard but the work load on ship repair and construction was low. Consequently, employment itself was at a low ebb.

Times and conditions in the world were changing, however. The 1930's saw the emergence of two significant military powers that threatened stability. Japan had invaded the main Asian continent and had secured large portions of China and Manchuria. Future expansion of the Japanese Empire would surely threaten the mineral rich South-East Asia regions and the many islands of the western Pacific. Europe saw Adolf Hitler's mercuric rise to power in Germany with his Nazi party and his ideals of reunification of the German people. Old Treaties were ignored or put aside as Germany began its move to again attempt to control the European continent.

All this threatening activity had a significant effect on the U. S. Government. In 1934, the United States Congress passed the Vinson-Trammell Act that, in essence, permitted the navy to build the fleet up to the limits prescribed by the Washington and London treaties.<sup>1</sup>

Although no immediate increase in fleet size was realized, there was a significant outcome of the act to the U. S. Navy's facility planning process. The Shore Station Development Board was reorganized and given a new mission. Prior to this time, local Shore Station Development Boards in each naval district forwarded prioritized lists of desired projects to the review authority of the Bureau of Yards and Docks. All the lists submitted were compared with assigned missions given by the Chief of Naval Operations, then prioritized and forwarded to the Bureau of the Budget for funding consideration by congress. The Vision-Trammell Act reconstituted the composition of the Shore Station Development Board to include a member of each of the major bureaus in the Navy administration as well as the Office of Chief of Naval Operations. This assured equal representation of interests of each branch of the Navy within its respected assignment of mission responsibilities.<sup>2</sup> Further, priorities were established for new construction in the future. In essence, the west coast, Panamal Canal Zone, the Hawaiian Islands, the Philippines and Guam were given the highest priority (an "A") classification. (The "B" classifications was given to the activities in the northeastern United States, the "C" classifications was given to the southeastern United States and Caribbean area and, finally, the "D" classification to the central United States, Alaska and American Samoa.)<sup>3</sup> These classifications were only generally followed by the Shore Station Development Board; however, there was assurance that continued construction would be funneled to the west coast and, specifically to the Puget Sound Naval Shipyard.

The first real expansion of the Navy after World War I was authorized immediately following Hitler's invasion of Austria by the passage of the Vinson Bill of May 17, 1938.<sup>4</sup> Essentially the bill provided for a twenty percent increase in ships and an increase in aircraft. The Navy recognized that the increase in the operational forces also dictated a necessary increase in the maintenance and construction of the bases and navy yards that support the fleet. In December of 1939, the Chief of the Bureau of Yards and Docks implemented a new streamlines project planning, funding and construction process with a reorganization of the Shore Station Development Board. The new board could take quicker action on programming and authorizing projects required to meet the exigencies of the impending war. In September, 1940, a special investigative board was established by the Secretary of the Navy and charged with responsibility for determining the needs of the naval shore establishment necessary to support the needs of the fleet in peace and war.<sup>5</sup> The Greenslade Board (named for its senior member, Real Admiral John W. Greenslade, U. S. N.) submitted its report to the Secretary of the Navy on January 6, 1941. In essence, the Greenslade Board made specific recommendations concerning the designation of certain areas as major home bases for the fleet and air force and other secondary support bases. On the Pacific coast the board recognized Puget Sound as a main base area along with San Francisco.<sup>6</sup> Further, the board recognized that it would be imprudent to concentrate more new activities in the limited yard areas of Mare Island and Puget Sound

without impairing their basic mission of ship repair and construction. Thus, new base build-ups were proposed for San Diego and Hawaii.<sup>7</sup> The board did emphasize the importance of upgrading existing facilities to keep ship repair and construction capacities at highest levels. Specifically, the plan called for ship-repair facilities in the Puget Sound area to be adequate to care for twenty per cent of the total repair load of the fleet.<sup>8</sup>

Thus, the threat of global war spawned a number of studies and actions that significantly increased the size of the Navy and support to the fleet with the construction of new bases and rejuvenation of existing ones. Inspired by the surrender of France to Germany, the United States Congress passed the Naval Expansion Act (Pub. No. 757, 76th Congress),<sup>9</sup> in July, 1940. The "Two Ocean Navy Bill" (as it was known) superimposed an expansion of seventy per cent in the fleet on top of the twenty per cent authorized by the Vinson expansion of 1938 and the eleven per cent increase that had been authorized earlier in 1940. All of this increase in Naval operations and support had an incredible impact on the Puget Sound Naval Shipyard and the city of Bremerton.

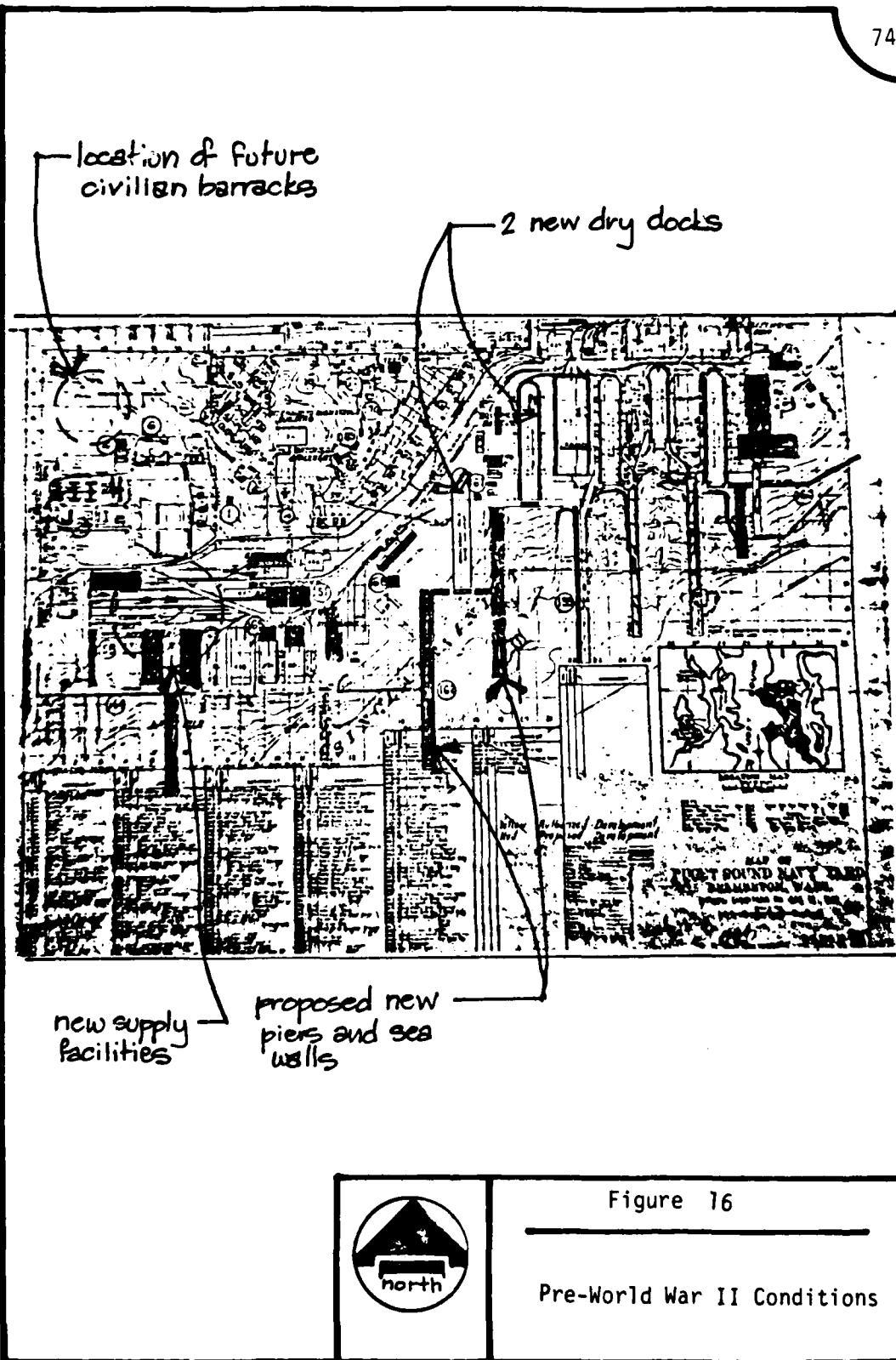
#### The Growth in the Shipyard

The period of the early and mid 1930's saw only modest growth in the area while physical development was limited to projects sponsored by the federal government under the guise of the Works Progress Administration.<sup>10</sup> But, this tranquility was short-lived. The years immediately preceding and including World War II represent the single largest growth period

for the shipyard and the city. The threat of impending work and the need to support an ever increasing Navy directed an unprecedented facility improvement and ship repair program at the shipyard. Rapid growth was noted in the city as it responded to the increase in workers.

The Navy reports that between 1938 and 1945 a total of \$590 million was expended for construction and improvements at navy yards.<sup>11</sup> The impact of the Vinson twenty per cent fleet expansion program and the congressional "Two Ocean Navy" Act started the massive expenditures that up-graded the yards and prepared the fleet for war. It is interesting to note that the first significant project initiated after the fund appropriations of the 1938 expansion was for a graving dock at the Puget Sound Navy Yard.<sup>12</sup> At that time, Puget Sound was the only navy yard on the west coast with a dock big enough to accommodate the existing battleships. Ships were being planned that were larger than the 867 foot dock, thus it was obvious that at least one dry dock should be available on the west coast to serve the fleet. Work was started on a new 1,000 foot dry dock (Number 4) in the fall of 1938 and work began on another new dock a year later.<sup>13</sup>

Before the war, the Puget Sound Navy Yard was the only yard on the west coast that could repair battleships. Its facilities included three dry docks and four piers, one of which mounted a 250 ton hammerhead crane (necessary for handling the turrets and guns of the battleships). Figure 16 illustrates the condition of the yard just before the war. Construction during the war significantly increased the repair and



construction capabilities with the addition of two more dry docks and the erection of two, double ship-building ways. Service buildings and shop facilities for the new dry docks and ship building ways were erected on the regraded fill area south of the existing industrial area.

As mentioned previously, construction of new waterfront facilities began in 1938 following the congressional approval of the twenty per cent fleet increase. Dry Dock Number 4 was the first facility and was built with a depth over the keel blocks of 43 feet thus allowing the largest ships in the planned navy inventory to enter for repairs. A steel sheetpile earth fill cofferdam was constructed around the seaward end of the dock and the interior portion was then excavated. The final dock and the interior portion was then excavated. The final dock measured 133 feet by 997 feet and was completed for use by October, 1940. Dry Dock Number 5 was similar in size to Dock Number 4 and was started a year later. There was also an underground connection between the water pumping systems of Docks Number 4 and 5.<sup>14</sup> The ship building facilities were increased during 1942 with the erection of two double ship building ways. Each pair was built 109 feet wide and 400 feet long with the purpose of building escort vessels.

Concurrent with the work on the docks and ship building ways was the construction of other support facilities.<sup>15</sup> In August, 1940 a 360 by 140 shipfitters assembly shop was started. Later in the same year, work was begun on a new quay wall and a 700 foot long fitting-out pier. In May of 1941, construction of a second 90 foot by 730 foot fitting-out

pier was authorized and work began on the 1,480 foot west quay wall. The summer of 1941 saw construction of a 450 by 150 foot fireproof seven-story general warehouse and an 800 by 120 fireproof supply pier. Construction in 1942 included the following: two more double shipways with a craneway and an assembly platform for escort vessels, extensions to the machine shop, a new warehouse and a 540 by 300 foot shipfitters' shop. In 1943, the Navy connected the shipyard to the main railroad lines coming out of Shelton, Washington with the construction of a five-mile spur.<sup>16</sup>

The dramatic increase in the workload at the yard during the war occasioned a large increase in the work force. Accordingly, there was a real shortage of adequate housing in the areas around the yard. Some federal programs addressed family housing needs (this will be discussed in a later section of this paper) but there was an acute shortage of adequate quarters for single men and women. Therefore, construction of four four-hundred person dormitories was begun in September, 1942.<sup>17</sup> The barracks were located in the northwest corner of the yard and were triple wing, two-story wood frame buildings. The buildings were finished and occupied in November, 1942.

The overhaul, repair and construction work at the yard during the war years was formidable. The P. S. N. S. newspaper The Salute,<sup>18</sup> reported in its 60th anniversary issue that 394 ships were repaired, overhauled, fitted-out or built during this period. To respond to this workload the work force increased from a pre-war average of 5,000 to

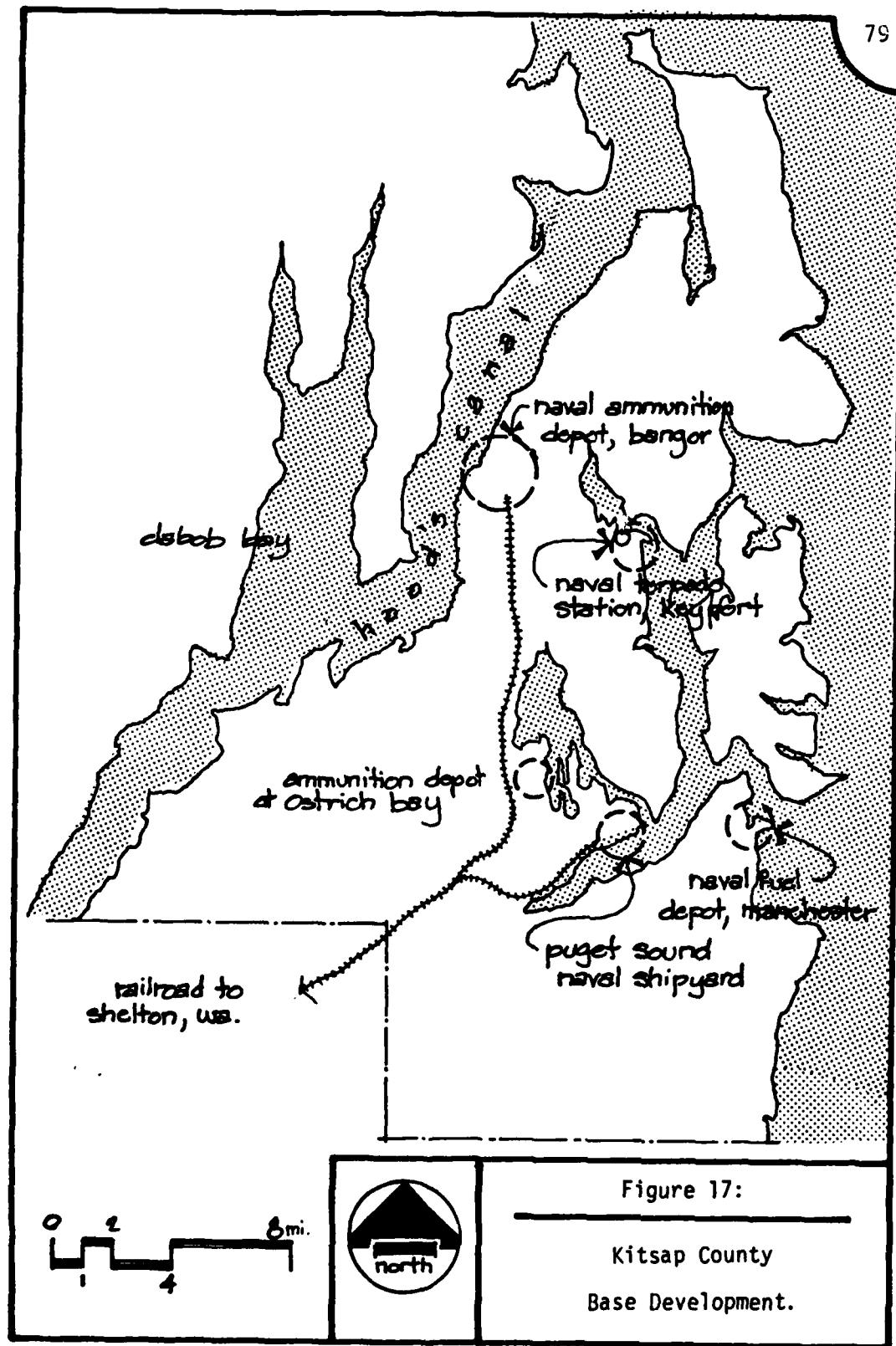
over 32,000 by the end of the war in 1945. Many capital ships visited the yard for repair or other work and included 31 battleships, 18 aircraft carriers, 13 cruisers and 69 destroyers. Fifty ships were built or fitted-out during the war. War repair work started literally immediately following the December 7, 1941 Japanese attack on Pearl Harbor, Hawaii. The battleship U. S. S. Tennessee arrived for repairs on December 29, 1941 and the battleship U. S. S. Maryland arrived a day later. Both ships had been seriously damaged in the attack. In 1942 two of the battleships (the U. S. S. California and the U. S. S. West Virginia) that were sunk in the attack were raised and brought to Puget Sound for re-building.

I should mention that this time that the entire Puget Sound region received considerable interest and construction related to the war effort. The Navy Yard, Puget Sound continued to be the largest single navy base in the area but the various studies by boards on expansion of the Navy caused significant increases in area bases. The Hepburn Board<sup>19</sup> filed its report on December 31, 1938, and recognized the Naval Air Station at Sand Point (Seattle) as a major air base while recommending expansion of its ability to handle aircraft squadrons and repair work. The air base became the major operational field in the Puget Sound area. Major supply depots were established at centers of railroad and shipping activities at Seattle and Spokane. In Kitsap county the Navy built a new ammunition depot and loading-out point at Bangor (on the Hood Canal) and extended a forty-six mile railroad into the county that connected

with the Northern Pacific line in Shelton, Washington. This was significant because it is the first time the area was directly connected by railroad to the rest of the United States. A 4.6-mile spur of this rail line was also connected to the Navy Yard. A major fuel storage and dispensing facility was established at Manchester and a major communications station was built on Bainbridge Island. The net effect of all this expansion<sup>20</sup> was an unprecedented growth in Bremerton and its surroundings. The locations of these activities is shown in Figure 17.

#### Growth in the City Itself

The period of the pre-war years and World War II itself represented the single largest growth phase that Bremerton has ever seen. The 1940 U. S. Census shows 15,134 persons residing in Bremerton. In 1945, this population was estimated to be over 80,000 people according to city water department records.<sup>21</sup> The same records indicated that the metropolitan area around Bremerton (south and central Kitsap County) may have had as many as 120,000 more residents.<sup>22</sup> This four-fold increase in population in such a short period of time posed a significant impact for the city to absorb. The largest single impact was, like the World War I emergency, on the available housing stock. The federal government sponsored numerous programs for the construction of family housing. The programs built 6,246 family housing units and 1,500 apartments units in and around Bremerton.<sup>23</sup> Private construction converted some houses and garages into rental living quarters. This tremendous increase in



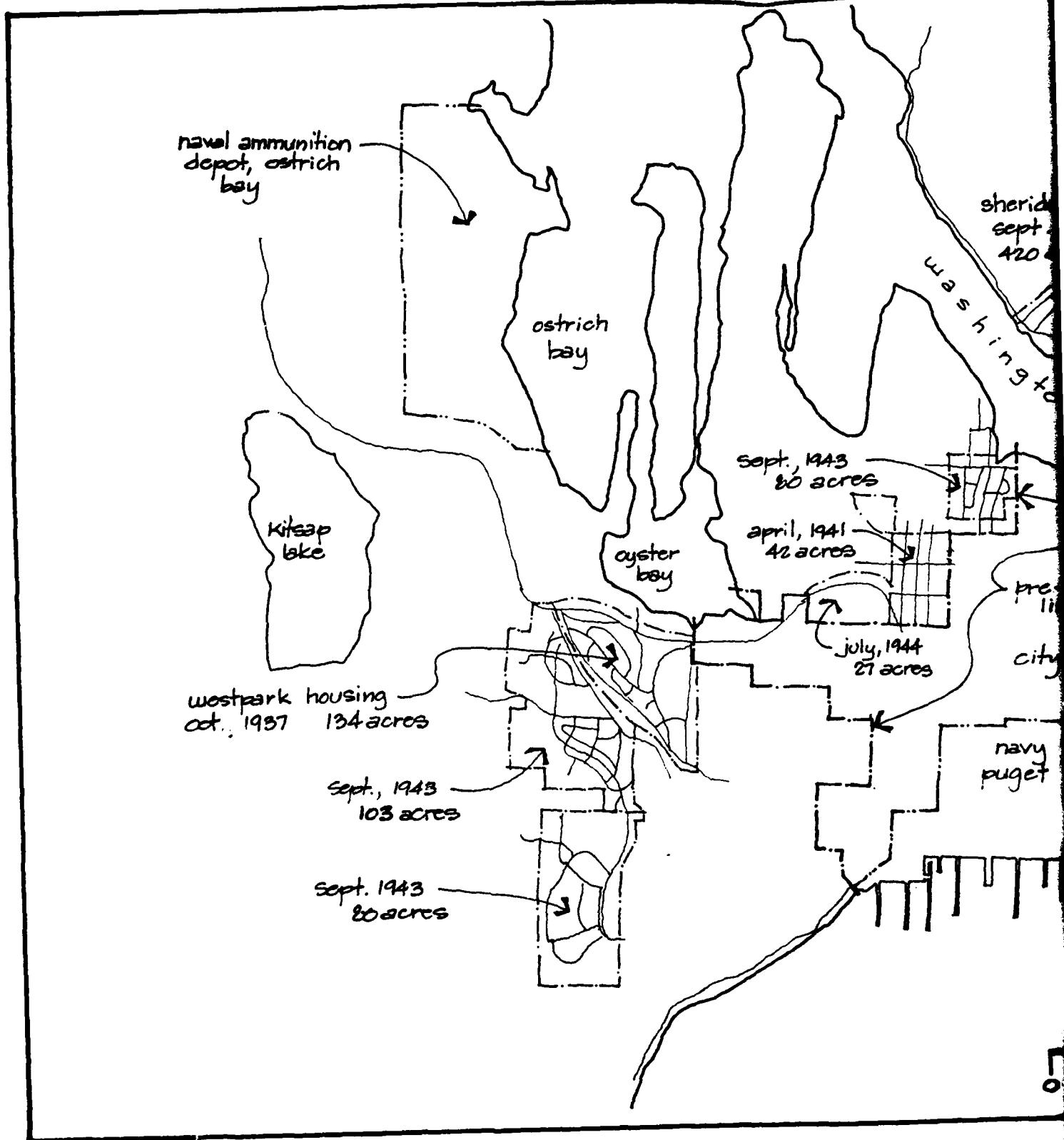
population and their need to get to and from work coupled with the war rationing of gasoline, oil and rubber products also impacted the existing transportation networks of buses and taxis. Further, the rapid growth and increased demand placed new requirements on the city's utility systems.

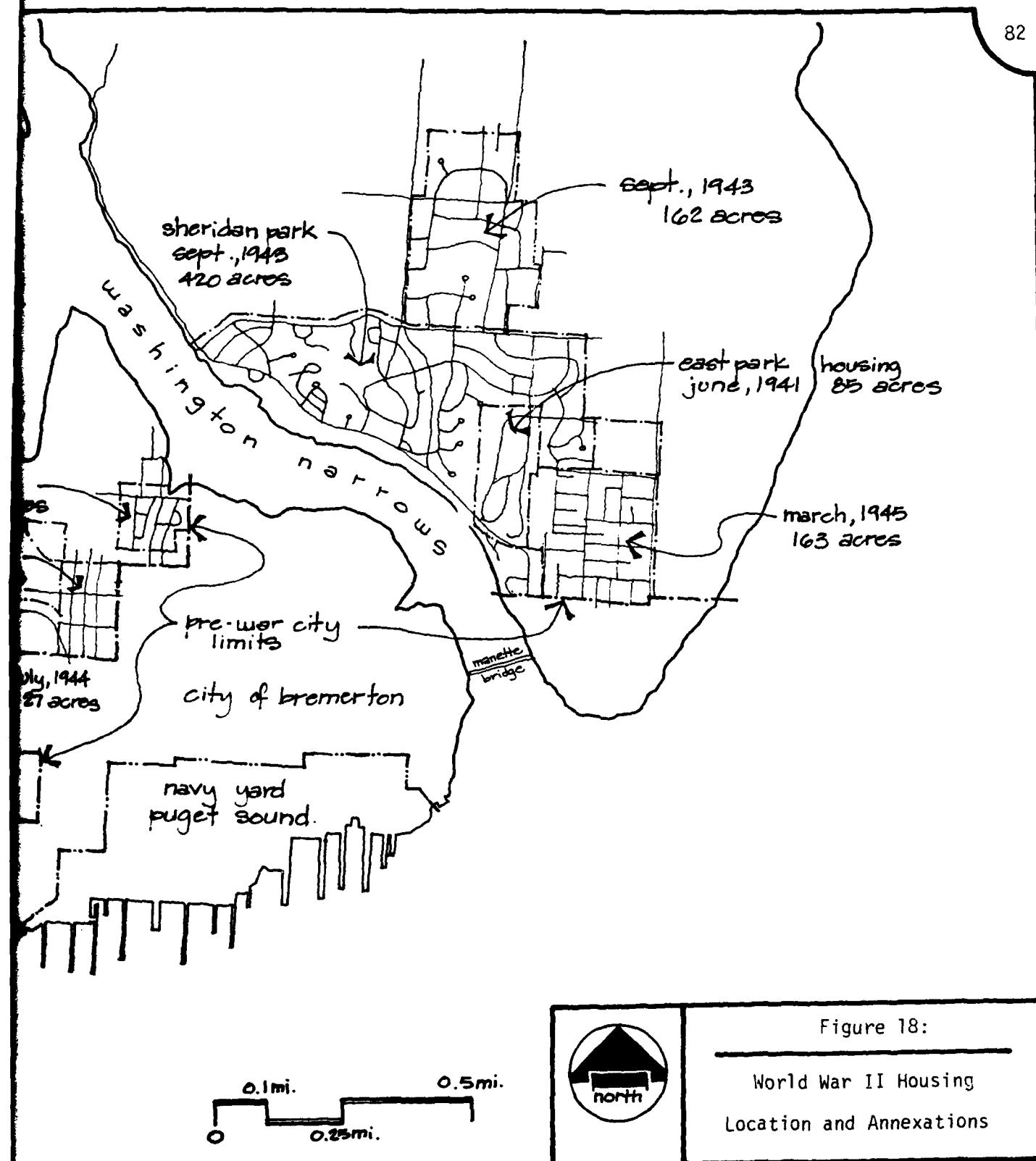
The growth in the housing market was preceded in the late 1930's with the passage of federal legislation for slum clearance for public housing. The state of Washington was slow to enact the necessary enabling legislation but finally did so in 1939. The Bremerton Housing Authority was established in July of 1940 in response to the increasing work force at the Navy Yard. Local water department records indicate that 1940 represented an unbelievable rate of growth.<sup>24</sup> As stated before the U. S. Census showed a population of just over 15,000 persons in 1940. By the end of the year, the population was estimated to almost double to 30,000 persons and then increased to over 80,000 before the war was over. This tremendous influx of population was attributed to the war related increase in work force at the navy yard and other bases in the area.

The Bremerton Housing Authority was formed as a five-person commission and given the planning responsibility of identifying needed housing requirements to the federal government.<sup>25</sup> The task was formidable but the outcome was the construction of eight housing projects that contained 6,246 units of family housing and also 1,562 apartment units to meet the needs of single persons. The Bremerton Housing Authority owned and

managed only the first development, Westpark in which 600 units were built.<sup>26</sup> All the other developments were managed by the Bremerton Housing Authority through lease agreements with the Federal Public Housing Authority (the owners).

These new housing areas represented a change from existing conditions in the city. Typically, the housing areas were built on undeveloped land adjacent to city boundaries. The first areas occurred to the west of Bremerton immediately south of the Naval Ammunition Depot on Ostrich Bay. The linkage to Manette allowed later and larger developments (Sheridan Park and Eastpark) to be built across the Washington Narrows north and east of Bremerton. In contrast to the infill housing built for the World War I crisis, these developments were planned and built as separate, unified neighborhoods. Each typically broke the standard platted grid with curvilinear streets that responded to the conditions of the particular site. The housing was usually one or two story multi-unit buildings (two to four units per building); however, some single houses were built. Further, each development included open green space and often had a community recreation center for the neighborhood. The architectural character of these developments did not achieve the elegance of the World War I housing. Rather, the units were wood frame with either wood or asbestos cement board siding with shallow pitched mineral shingle roofing. In 1943, the city of Bremerton annexed the areas into jurisdiction.<sup>27</sup> Figure 18 illustrates the location of these various projects. Note how the interruption of the right-angle





grid makes the particular area distinctive compared to the rest of the city.

Prior to 1937, the city occupied approximately 1,376 acres. During 1937 to 1940, 292 acres were annexed with the largest portion being the 134 acres at what was to become the Westpart Housing area. In 1941, five different annexations expanded the city by 158 acres. In 1943, six annexations were made that totaled 788 acres and encompassed five of the federal housing areas.<sup>28</sup> Aside from the consolidation with Charleston, this represents the largest single physical growth in the city. The growth slowed in 1945-1948 with 409 acres added to the city.

The transportation facilities in the city were also heavily impacted during this period. The massive increase in population and the need to move about in the city for work and shopping, posed new problems for buses, taxis and the ferry system. The rationing of the war-related materials (gasoline, oil, tires and spare parts) further aggravated the situation by limiting the number of private vehicles that could be driven. Before 1940, the Bremerton-Charleston Transportation Company operated between thirteen and fifteen buses. In 1940, the company bought out all the small private lines in operation and increased its fleet by 1943 to twenty-seven buses.<sup>29</sup> The shipyard itself also sponsored bus service to some of the neighboring communities to help transport workers. Further, there was no railroad service to Bremerton at the time, thus many workers that traveled from Seattle and Tacoma came by private bus.

The ferry boat system continued to be the main link from Bremerton to Seattle. At that time, the ferries were operated by a private concern, the Black Ball Company. As noted earlier, the primary water linkage to Seattle was by ferry. Service started in 1900 but it was not until 1924 that the first ferries to carry cars were used. In 1938, the terminal facilities in Bremerton were generally improved. During the war period, five ferry boats were used on the Bremerton-Seattle route and it was estimated by the navy yard that over 3,000 of their workers were carried each day from Seattle to Bremerton in addition to 5,000 other passengers on the boats.<sup>30</sup>

The story of growth in the area can also be traced by the massive improvements to the city water system. The early 1930's saw numerous projects improve the water system that were sponsored by local bond issues or subsidies from the Federal Government's Public Works Administration. By 1937 the city's supply system consisted of four reservoirs with a total storage capacity of thirteen-million gallons. The distribution system itself was a combination of wood and cast iron pipe that was approximately thirty-five miles long. The pre-war increase in shipyard employment was seen as a signal for the city to start planning expansion and repair of the system. In 1939, the city purchased 2,000 additional acres in the watershed and increased the storage capacity of the lakes.<sup>31</sup> Improvements were also made in the pumping and distribution systems that delivered water to the city. By 1941, the rapid increase in population forced the city into immediate action. Federal

grant funds were coupled with local obligations to increase and improve the water system. Some of the improvements included: first, four new wells with pumps, second, new fourteen-inch cast iron supply main from the head of Sinclair Inlet into the city, and third, new distribution mains to serve the city proper and projected growth on the east side and to the north.<sup>32</sup> Other system expansions and repairs were made during the war and were financed by Water Revenue Bonds. By the end of the war, the water system was capable of delivering 10,000 gallons per minute to the city and included over eighty-five miles of water mains. The new housing areas built by the government included their own utility lines, thus realizing further expansion of the system by over thirty miles of mains. Thus, the water system's growth from 35 miles of mains to over 120 miles reflects the tremendous increase of population in the area. The quick response of the city coupled with the bountiful water resources in the area (foreseen in the original investigations for the shipyard) allowed this expansion to take place with a minimum of disruption.

There is no question that the pre-war and war years of 1938 to 1945 represent the largest period of growth that the shipyard and the city have ever seen. The employment at the navy yard rose from a pre-war average of 5,000 to over 32,000 by 1945. The city's population also followed the same incredible increase by changing from 15,000 in 1940 to over 80,000 in 1945. This increase of workers, their families and their needs proved to be a formidable force for the city to absorb.

Again, physical expansion of the city was limited by geographic boundaries of water and topography that forced development in specific directions and patterns. Utility systems required massive improvements to accommodate the needed new construction. Transportation systems were taxed to their maximum to meet the needs of the people not only by their number but forced war-time rationing of vital materials.

All these forces provided a legacy of growth that is unmatched in the history of the area. The shipyard itself more than doubled its physical plant capacity for ship repair and construction. This increase was accomplished not by encroachment on the city but by intensifying the waterfront activities. By the end of the war, the city itself had grown in physical size by two and one-half times its 1937 acreage due to annexations of war-time housing areas. The water supply system of the area had tripled. Bremerton had become a major inter-modal transportation center with the new railroad, the improved ferry system, and other surface road systems connecting the industrial base with the rest of the northwest.

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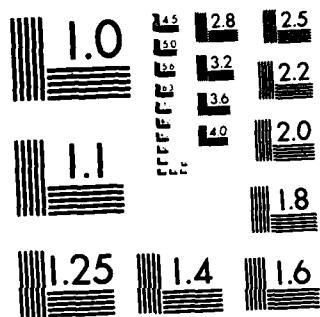
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## CHAPTER IV NOTES

<sup>1</sup>Department of the Navy, Bureau of Yards and Docks, Building the Navy's Bases in World War II, (Washington: Government Printing Office, 1947), Volume I, p. 3.

<sup>2</sup>Prior to this time, each naval district would place its projects in priority order based on the missions assigned. The list of priorities would be submitted but there was really no way to compare the priorities of one area compared to another. This change would ease that problem.

<sup>3</sup>Department of the Navy, Bureau of Yards and Docks, Building the Navy's Bases in World War II, p. 3.

<sup>4</sup>Ibid.

<sup>5</sup>Ibid., pp. 8-9.

<sup>6</sup>Ibid., p. 10.

<sup>7</sup>Ibid., p. 11.

<sup>8</sup>Ibid., p. 39.

<sup>9</sup>Ibid., p. 32. The law was actually approved by the President on July 19, 1940.

<sup>10</sup>Short, "History of Bremerton Water Department," pp. 25-30.

<sup>11</sup>Department of the Navy, Bureau of Yards and Docks, Building the Navy's Bases in World War II, p. 169.

<sup>12</sup>Ibid., p. 173.

<sup>13</sup>Ibid.

<sup>14</sup>Ibid., p. 195.

<sup>15</sup>Ibid.

<sup>16</sup>Ibid., p. 336.

<sup>17</sup>Ibid., p. 338.

<sup>18</sup>Puget Sound Naval Shipyard The Salute, September 14, 1951.

<sup>19</sup>Department of the Navy, Bureau of Yards and Docks, Building the Navy's Bases in World War II, p. 4 and 26. The board was named for its senior member, Real Admiral A. J. Hepburn, U. S. Navy. The board investigated the nation's need for "additional submarine, destroyer, mine, and naval air bases on the coasts of the United States, its territories and possessions." The board made its final report on December 1, 1938 and, in part, endorsed the plan for air-base development. Sand Point (in Seattle) was placed in the group of bases designated for earliest completion.

<sup>20</sup>Ibid., pp. 233, 300, 325, 331, 334, 350-351, 401.

<sup>21</sup>Short, "History of Bremerton Water Department," p. 32.

<sup>22</sup>Ibid.

<sup>23</sup>Ibid., p. 33.

<sup>24</sup>Ibid., p. 32.

<sup>25</sup>Ibid., pp. 32-33. The Bremerton Housing Authority was founded on July 17, 1940. The original composition was Lester C. Gaylan, Mrs. Lulu D. Haddon (former state senator), J. C. Baer, Ransford A. McNeal and, as chairman, James Russel. Later appointments included T. S. Morrison, George Callahan, and Harold Lebo.

<sup>26</sup>Ibid., p. 33.

<sup>27</sup>Annexation records, City of Bremerton Engineering Office.

<sup>28</sup>Ibid.

<sup>29</sup>Bremerton High School creative writing class of 1943, "The History of Bremerton," Kitsap County Library, p. 48.

<sup>30</sup>Ibid., p. 49.

<sup>31</sup>Short, "History of Bremerton Water Department," pp. 30-30, and pp. 35-37.

<sup>32</sup>Ibid., p. 36.

## CHAPTER V

### SUMMARY AND COMMENTARY

#### Summary

In this paper I have addressed the question of why a particular city is located where it is and what factors influenced its growth. Specifically, I have dealt with the relationship of a large industrial activity, the Puget Sound Naval Shipyard, and its influence on the development of the city of Bremerton. The founding of the shipyard in its present location was significant for the area and provided the reason for the existence of the city. Various periods of growth in the shipyard had a direct influence on the development patterns of Bremerton and also inspired growth in the shipyard were related to international crisis during which the United States had to prepare for war. In each case, there were large increases in population that had to be absorbed and accommodated by the city. Further, a physical shift in emphasis of development within the shipyard in the early years provided the impetus for the sustained growth of Bremerton.

The original decision to locate the Navy Yard was the result of a number of reasons: exhaustive investigations by various individuals and appointed commissions extolled the virtues and advantages of the site while the actual approval by congress was a result of good timing and a bit of political chicanery on the part of proponents. The decision to build the navy yard in 1891 provided the main reason for the towns

of Charleston and Bremerton to be established. Charleston was the dominant town of the two until the Navy decided to expand the repair capability of the yard in 1900 and 1901. New facility construction and a greater emphasis in the eastern portion of the yard favored and influenced growth in Bremerton. This turn around is significant because Bremerton, not Charleston, was to become the predominant urban area supporting the yard and benefitting from growth.

The coming of World War I saw rapid growth in the work force of the navy yard and numerous facility improvements. The patterns of development effectively divided the shipyard into two zones. One, to the south and east, encompassed the main industrial functions of the yard, while the other, to the north and west, included housing and personnel support facilities.

The Navy made modest purchases of land from the cities in 1918; however, it was expensive and proved to be the last physical encroachment made by the yard on the city. Further requirements for additional land were satisfied through massive re-grading efforts that cut away one ridge on the base and filled tideland areas behind quay walls. Growth was also seen in the cities as a result of Navy Yard increases. Severe shortages of housing were noted and this was somewhat relieved by federally subsidized housing. These new units were built on vacant lots between existing houses and served to more clearly define the texture and residential character of the town. Additionally, Bremerton also made its first physical expansion with the annexation of Manette in 1918.

The period of the 1920's and early 1930's saw a decline in the Navy Yard's work force and the yard itself became less of an influence in the shaping of the urban area around it. Bremerton, however, experienced two events that would prove significant in later developments. First, was the consolidation with Charleston in 1927. Both cities found themselves growing together with the physical constraints of shorelines, hills, and the Navy Yard restricting further growth. The duplication of government and other community services no longer seemed necessary, thus, consolidation was in order. The second event was the spanning of the Washington Narrows with a bridge that finally provided a physical connection from Bremerton to the east and north. Bremerton emerged from this era with new advantages; the single city government in the vicinity of the navy yard allowed singular, not plural comprehensive planning for the growth to come with World War II, and, the physical linkage to Manette would finally permit expansion of the city to the north and east across the Washington Narrows.

The World War II era represents the greatest single period of growth experienced by the Navy Yard and Bremerton. The work force at the Navy Yard was the largest it has even been and the facility construction reinforced the important role the yard was serving as one of the primary repair bases for the Pacific Fleet. The effect of this rapid growth in the Navy Yard was significant development in Bremerton. The population more than quadrupled between 1940 and 1945. Again, all resources of the city were taxed to their maximum. Impacts first occurred on the

available housing stock and, like the World War I era, federal housing projects were introduced to the area. These new projects, however, were built as separate subdivisions on the fringes of existing city boundaries. Bremerton eventually annexed these areas into city jurisdiction and this physical increase in size was the largest ever experienced by the city. The utility and transportation systems required major increases and improvements to accommodate the rapid population growth and development needs.

#### Commentary

The history of growth of the Puget Sound Naval Shipyard and the city of Bremerton established a basic pattern of development. This pattern responded initially to the location of the shipyard and the rectilinear platting of the two adjacent towns, Bremerton and Charleston. Physiographic constraints of adjacent hills and waterways confined early growth to the Turner Peninsula. Later developments and growth during the war years of 1938 to 1945 overcame these liabilities and saw the city expand into the regions west, north and east. But, what can we learn from all this? I feel this particular study of Bremerton and the Puget Sound Naval Shipyard leads us to broader lessons and observations concerning planning and city development.

My initial observation is that although it may seem that the city development may have occurred by chance alone, there were determinants at work other than chance. In this particular situation there is a very close relationship between the city of Bremerton and the Puget Sound

Naval Shipyard. The Navy's decision to locate a shipyard in the area provided the reason and a basis for the city to be built. The shipyard became a source of jobs and other work for the residents of the city. The city, in turn, provided a source of goods, commerce and services for the shipyard. Growth in the shipyard influenced growth in the adjacent city and the two periods of national emergency (World Wars I and II) saw incredible growth in the entire region. This example of Bremerton and the Puget Sound Naval Shipyard illustrates a classic relationship of a city being almost totally dependent upon an industrial activity for its founding, its growth and its very existence.

My next observations deal with the decisions and impacts of a major environmental intervention on an area. The original precepts of the Navy concerning the location of the shipyard are interesting to examine. The physical and geographic requirements were stated in terms of how they would benefit the shipyard. Further, considerations of transportation, commerce and demographic qualities of the area were investigated with the idea of supporting the shipyard. In all these cases, the requirements were centered on an inward look towards the shipyard. To put it another way, there was little regard for the real impact of the shipyard on the surrounding region. Concern for the outward look and impact of growth from the shipyard on the local community was manifested only in the crisis times of the world wars. In these instances, the Federal Government subsidized construction of living units and some utilities to help house the vast increases in population. Typically, though, this action occurred after the need was really identified.

This whole process is in marked contrast with a more recent development in the same region--the planning and construction of the Naval Submarine Base in Bangor, Washington, to support the new Trident submarine. The program requirements for the Bangor base are similar to the shipyard in terms of it becoming a major industrial complex that will increase the regional population by more than 10,000 people. However, the planning basis for the Bangor project was quite different from the development of the shipyard. Federal requirements plus lessons from past works (the Puget Sound Naval Shipyard included), have placed the Navy in a posture of considering the effect and impact that the new base will have on the area before it is built. Thus, any detrimental impacts are realized early in the process and can be dealt with properly rather than after the fact (as happened with Bremerton). Also, planning for the Bangor base was conceived truly at a regional scale with provisions for transportation systems, housing support and interface with the existing communities. The experience of the Puget Sound Naval Shipyard shows us that the early assumptions were that an urban area would grow in the vicinity of the base and provide support. At Bangor, however, the concept was just the opposite. There was no intent for a new city to grow next to the base, rather, growth would be encouraged in the existing nearby cities of Poulsbo, Silverdale and Bremerton. Physical site requirements for Bangor were not as restrictive as the shipyard, and the Navy preferred to develop the base on land it already owned rather than buy new land. Another difference between the two bases was that the Bangor base was developed on the scheme of being a single

purpose base (training, support and operation of only the Trident submarine), while the shipyard was much more general in its support to fleet units. The net result of this planning effort was a more controlled growth in the region that reinforced existing urban patterns of development instead of creating new and different ones.

Bremerton was greatly influenced in its growth patterns by events in the shipyard. Various development patterns emerged and I feel they deserve comment concerning their relationship to national themes in city planning. The early Bremerton layout was typical of most western United States cities with the strict orthogonal, regular grid pattern. The street and block patterns were laid out long before they were ever really developed. Typically, this pre-established pattern and texture proved more of a liability than an asset as cities grew; it prevented housing clusters and any feeling of community design that interspersed built and open space. This very point was the dilemma faced by the planners and designers of the World War I housing in Bremerton. The preferred alternative was to void the grid pattern and build a new "neighborhood" that responded to the site conditions, encompassed a unity of design and texture, and added amenities of open space and support facilities such as schools. This plan was not built; instead, expediency and economics directed that the development follow the established grid and the housing was actually built as infill units between existing houses.

The legacy of the grid pattern was to continue until World War II. By this time, however, there had been a number of ideas promoted in city

planning at the regional and national levels that would greatly affect what was to happen in Bremerton. The influence of the Garden City Movement from England promoted lower density of development and grouped housing designs along with green belts. The development of Radburn, New Jersey, and the green belt towns of the 1930s, explored the concepts of cluster housing, curvilinear street patterns and the use of the cul de sac (a means of dividing modes of transportation to prevent pedestrian and vehicular conflicts). Further, the idea of neighborhood planning was being promoted to overcome the perceived problems of large urban areas. All these ideas were brought together in the construction of the World War II housing in Bremerton. Each area was conceived as a neighborhood in its own right and contained low density housing, open green space and community facilities for schools and recreation. The street layouts broke the grid pattern and were curvilinear with cul de sacs that responded to site conditions. Although the buildings were not particularly distinctive in their architecture, there was an attempt to unify the design sense of each development and promote the idea of continuity in the neighborhood.

Finally, in a more limited sense, the philosophy of this development followed the overall concept seen in most United States cities: the concept of urban sprawl. Cities were seeing development not within their present boundaries but on the fringes. The same is true in Bremerton. The construction of the new housing areas occurred at the perimeter of the city rather than within the existing city limits. This expansion

added almost fifty per cent to the area of the city while being characterized by low density, residential structures; again, following the pattern of urban sprawl.

The close relationship between the Puget Sound Naval Shipyard and the city of Bremerton has been detailed in this paper. The establishment of the Shipyard gave the city a reason for being and the growth of the city was directly affected by the growth of the Shipyard. Times of national crisis saw rapid growth in both Bremerton and the Shipyard and with the growth, planning lessons to be learned. I have illustrated how this example of Bremerton and the Puget Sound Naval Shipyard exemplifies the effect and impact a base may have on a region. These lessons, and others, helped form the basis for the planning approach taken in the development of the Naval Submarine Base Bangor. Finally, I found it interesting to note how the patterns of growth seen in Bremerton were influenced by regional and national planning influences. Although one may feel that this relationship of Bremerton and the Puget Sound Naval Shipyard was an isolated case, it is apparent to me that far greater lessons and principles were present here. Forms, trends and patterns developed that clearly echo the very essence of the American planning scene in this century.

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